National Institute on Alcohol Abuse and Alcoholism

RESEARCH Monograph 1

ALCOHOL and WOMEN

... OF HEALTH, EDUCATION, AND WELFARE • ...lic Health Service • Alcohol, Drug Abuse, and Mental Health Administration

National Institute on Alcohol Abuse and Alcoholism

RESEARCH MONOGRAPH SERIES

1. Alcoholism and Alcohol Abuse and Women: Research Issues

Proceedings of a Workshop on Alcoholism and Alcohol Abuse Among Women, Jekyll Island, Georgia, April 2-5, 1978. This workshop was the first NIAAA-sponsored gathering of researchers to discuss the state of the art concerning women and alcohol. Workshop objectives were to discuss existing research, identify key issues, and develop research priorities for NIAAA research efforts.

DHEW Pub. No. (ADM) 79-835 *In press, 1980*

2. Alcohol and Nutrition

Editors: Ting-Kai Li, M.D., Steven Schenker, M.D., and Lawrence Lumeng, M.D.

Proceedings of a Workshop on Alcohol and Nutrition, Indianapolis, Indiana, September 26-27, 1977. The proceedings address alcohol metabolism and important questions related to the effects of nutrition on enzyme and cofactor levels in alcohol oxidation.

DHEW Pub. No. (ADM) 79-780 *Printed, 1979*

3. Normative Approaches for Prevention of Alcoholism and Alcohol Problems

Editors: Thomas C. Harford, Ph.D., Douglas A. Parker, Ph.D., and Lillian Light.

Proceedings of a symposium, San Diego, California, April 26-28, 1977. Papers describe the theoretical and empirical frameworks of the "socio-cultural" and "distribution of consumption" models of drinking behavior and assess their implications for strategies of primary prevention.

DHEW Pub. No. (ADM) 79-847 *In press, 1979*

Research Monograph No. 1

ALCOHOLISM AND ALCOHOL ABUSE AMONG WOMEN: RESEARCH ISSUES

Proceedings of a Workshop
April 2-5, 1978
Jekyll Island, Georgia

Sponsored by:

Division of Extramural Research, NIAAA

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

National Institute on Alcohol Abuse and Alcoholism
5600 Fishers Lane
Rockville, Maryland 20857

This publication is the product of a research workshop on alcoholism and alcohol abuse among women held at Jekyll Island, Georgia, April 2-5, 1978. The proceedings were compiled for the Division of Extramural Research, National Institute on Alcohol Abuse and Alcoholism, by CONSAD Research Corporation, under contract number ADM-281-77-0027. The presentations herein are those of the listed authors and may not necessarily reflect the opinions, official policy, or position of the National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; or the U.S. Department of Health, Education, and Welfare.

Library of Congress Catalog Card Number: 600166

DHEW Publication No. (ADM) 80-835
Printed 1980

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

Foreword

This volume is the inaugural issue of the National Institute on Alcohol Abuse and Alcoholism's new series of research monographs. This series sets forth current information on a number of topics relevant to alcohol abuse and alcoholism as reported through workshops in research, prevention, and treatment as well as through reviews on selected subjects.

For many years, NIAAA has supported workshops on diverse themes. In the research field, workshops were held on the alcoholic blackout, the fetal alcohol syndrome, alcohol and memory, and alcoholism and affective disorder. Usually, as in the case of the latter two, dissemination of workshop proceedings was achieved by commercial publication. In other instances, distribution of the workshop papers was less formal and, probably, less widespread. This monograph series, I believe, will serve a very useful purpose in providing a consistent outlet for new information as well as a comprehensive distribution to interested consumers.

Workshops supported by NIAAA have served to gather current knowledge in a particular field related to alcoholism and to disseminate it; encourage new activities, especially in research, which could lead to a better understanding of alcoholism and how to help the alcoholic person and his family; and to recruit new personnel into the alcoholism field. This series of research monographs is designed to further facilitate the dissemination process by informing researchers, clinicians, counselors, program administrators, and other interested persons about significant findings which may be useful in improving programs in the alcoholism field. Proceedings from previous workshops which have been identified for inclusion in this series include "Alcohol and Nutrition" in the research area and "Normative Approaches to Alcoholism and Alcohol Problems" in the prevention area.

Albert A. Pawlowski, Ph.D.
National Institute on Alcohol Abuse and Alcoholism

Preface

It is of particular interest that the first issue of the NIAAA's new research monograph series focuses on the use and abuse of alcohol by women. The publication of this monograph follows the launching of a major new HEW initiative in the field of alcoholism announced by Secretary of Health, Education, and Welfare Joseph A. Califano, Jr., at the annual meeting of the National Council on Alcoholism, May 1, 1979, in Washington, D.C. This initiative gives prominence to the problem of alcoholism among women and signals a major commitment to combatting this problem.

NIAAA is responsible for coordinating and leading national efforts to prevent and treat alcoholism. In order to meet our responsibilities to the Nation's women, we must accumulate and analyze research information and develop effective, practical prevention and treatment approaches. Although problems of alcohol abuse and alcoholism among women have long been of great concern to NIAAA, it was timely to hold a research workshop on this problem. The workshop, which brought together recognized experts in problems of alcohol abuse among women and related fields, was designed to raise significant research issues, provide an opportunity for information sharing, and generate research recommendations — all in 3 days, including sessions throughout the day and late into the evening.

This proceedings document, which is organized by major workshop topic, presents papers developed for the workshop, summarizes participant discussions, and presents recommendations developed during work sessions held on the last morning of the conference. Also included is a general bibliography covering all major topics. In addition, the recommendations included in the papers, raised during discussions and specified in the work sessions, are meshed and organized to provide a set of summary recommendations included at the end of this proceedings document.

We are grateful to all the participants for their active involvement, especially authors of the papers and the evening session leaders whose organized substantive presentations guided the workshop discussions. We hope the proceedings will facilitate new

initiatives in this area by increasing the awareness of, and interest in, research on alcohol abuse and alcoholism among women, and thereby contribute to increased and improved research on this vital topic.

James C. Teegarden, Ph.D.
National Institute on Alcohol Abuse and Alcoholism

CONTENTS

Workshop Participants

Invited Guests and Observers

Linda Beckman, Ph.D
UCLA Center for Health Sciences
University of California at Los Angeles
Los Angeles, Calif.

LeClair Bissell, M.D.
Smithers Clinic
Columbia University School of Medicine
New York, N.Y.

Sheila Blume, M.D.
Unit Chief
Charles K. Post Alcoholism Rehabilitation Unit
Central Islip Psychiatric Center
Central Islip, N.Y.

Juan Chavira, Ph.D
Department of Behavioral Sciences
Pan American University
Edinburg, Tex.

Ruth Cooperstock
Addiction Research Foundation
Toronto, Ontario, Canada

Eileen Corrigan, D.S.W.
Graduate School of Social Work
Rutgers University
New Brunswick, N.J.

Joan Curlee-Salisbury, Ph.D.
Alcoholism Treatment Unit
Veterans Administration Hospital
Indianapolis, Ind.

Antonia D'Angelo
Chairperson, NCA Committee on Women and Alcohol
National Council on Alcohol
Philadelphia, Pa.

Kaye Middleton Fillmore, Ph.D.
Center for Alcohol Studies
Rutgers University
New Brunswick, N.J.

Violet Franks, M.D.
Carrier Clinic Foundation
Bellemead, N.J.

Edith Gomberg, Ph.D.
School of Social Work
University of Michigan
Ann Arbor, Mich.

Jessica Hill
Acting Regional Director — Ontario
Non-Medical Use of Drugs Directorate
Toronto, Ontario, Canada

Shirley Y. Hill, Ph.D.
Research Associate Professor of Psychiatry
University Pittsburgh School of Medicine
Western Psychiatric Institute and Clinic
Pittsburgh, Pa.

Shirley Jessor, Ph.D.
Institute of Behavioral Sciences
University of Colorado
Boulder, Colo.

Ben Morgan Jones, Ph.D.
Ms. Marilyn Jones
Research Department
Carrier Clinic Foundation
Bellemead, N.J.

Carol Joyce
Alcohol Program
St. Vincent's Hospital
New York, N.Y.

Invited Guests and Observers—Continued

Edward Klaiber, M.D.
Worcester Foundation for Experimental Biology
Shrewsbury, Mass.

Sandra Putnam
Rhode Island Group Health Association
North Providence, R.I.

Ana Rivera
Graduate School of Social Work
Rutgers University
New Brunswick, N.J.

Samantha Ross, Ph.D.
Hazelden Foundation
Center City, Minn.

Elizabeth Smith, Ph.D.
Department of Psychiatry
Washington University School of Medicine
St. Louis, Mo.

Joan Volpe, Ph.D.
Department of Anthropology
Catholic University
Washington, D.C.

Henry Wechsler, Ph.D.
Director of Research
The Medical Foundation, Inc.
Boston, Mass.

Sharon C. Wilsnack, Ph.D.
Director of Regional Alcoholism Rehabilitation Program
South Central Community Mental Health Center
Bloomington, Ind.

Jacqueline Wiseman, Ph.D.
Department of Sociology
University of California at San Diego
La Jolla, Calif.

Steven J. Wolin, M.D.
Associate Clinical Professor of Psychiatry and Medicine
Center for Family Research
Department of Psychiatry and Behavioral Sciences
George Washington University Medical Center
Washington, D.C.

NIAAA Representatives

Terry Bellicha
Director, National Clearinghouse for Alcohol Information

Zoe Carrigan, Ph.D.
National Clearinghouse for Alcohol Information

Nancy Dorman
Office of Program Development and Analysis

Barbara Najar
Division of Prevention

Ernest P. Noble, Ph.D., M.D.
Director (Jan. 1976-Apr. 1978)

Elizabeth Parker, Ph.D.
Clinical and Bio-Behavioral Branch
Division of Intramural Research

Albert Pawlowski, Ph.D.
Chief, Extramural Research Branch
Division of Extramural Research

Ruth Sanchez-Dirks, Ph.D.
Special Assistant to the Director

Marian Sandmaier
Writing Consultant
National Clearinghouse for Alcohol Information

James C. Teegarden, Ph.D.*
Extramural Research Branch
Division of Extramural Research

Margaret Wilmore
Coordinator for Women's Treatment Efforts
Division of Special Treatment and Rehabilitation

---

*NIAAA Project Officer for the workshop

Introduction

Ernest P. Noble, Ph.D., M.D.

It gives me great pleasure to welcome you to the first NIAAA-sponsored Research Workshop on Alcoholism and Alcohol Abuse Among Women. To my knowledge, this is the first time a group of alcohol researchers has gathered to discuss the state of the art concerning women and alcohol. As you are aware, our purpose is to discuss existing research, identify key issues, and develop research priorities and plans to be used by NIAAA in its research efforts.

The Extramural Research Branch started funding specific research on women and alcoholism in 1972. During the past 6 years, there have been eight such projects funded. These have ranged from the study of the use and abuse of alcohol by women, to the effects of alcohol during different times of the menstrual cycle, to effective treatment modalities for women. In addition, a great deal of the Institute's research effort has been directed toward the identification of the fetal alcohol syndrome, the effects of maternal alcohol use on the fetus, and the development of animal models. Several of you here today have received NIAAA funding to assist in your research.

We have 17 presently funded women's alcoholism treatment programs. In conjunction with other NIAAA-funded community alcoholism treatment programs, we are reaching an estimated 40,000 women a year. Questions can be raised as to the quality of treatment services being delivered to women, the identification of effective treatment modalities, the numbers of women being served in relation to the total alcoholic population, and the matter of specific programs for women versus coed programs.

We are presently reviewing responses to an RFP requesting proposals on the examination of operating programs designed to reach the employed alcoholic female, in order to generate information on the identification, referral, and treatment of the female worker with a drinking problem. We hope these contracts will provide sufficient knowledge to help us develop an occupational program that will meet the needs of women and that can be duplicated throughout the country.

The National Clearinghouse for Alcohol Information was the center for alcoholism prevention programs for women. The Clearinghouse has worked extensively with national women's organizations and centers. It focused on providing technical assistance to mobilize women's groups to initiate alcohol education efforts on a national and local level. A manual was developed by Marian Sandmaier which presents a brief overview of the female alcohol issue, elements of women's treatment and prevention programs, and resources. The manual, as part of a kit of information on women and alcohol, has been widely distributed throughout the country.

After many delays, the National Center for Alcohol Education (NCAE) curriculum package, *Decisions and Drinking: Reflections in a Glass*, is finally available for use. The NCAE is presently limiting distribution in order to track the use and effectiveness of the package. But after an initial period, the package will be available to all.

In June of last year, I issued a "health caution" regarding the likelihood that drinking during pregnancy poses a danger to the normal development of the fetus. The caution was prompted by research findings of which you are well aware. Since that time, new findings have reinforced the original research. NIAAA has stepped up its efforts to make the American public and health professionals knowledgeable about the risk of alcohol usage to the fetus.

Until now, I have presented a very brief overview of the kinds of activities NIAAA has undertaken in the women and alcohol arena. In addition, I would like to share with you some of the activities we are planning for the near future.

In May, we will be convening a 2-day meeting of women representing different segments of the alcohol field to provide NIAAA with women's perspectives on how to adequately address the prevention and treatment of alcohol abuse and alcoholism among women. Several of you will be invited to participate in that meeting as well. The papers developed for this meeting will be shared with the women attending that meeting.

Secretary Califano has asked us to develop an Initiative on Women and Alcohol. We have proposed three initiatives focusing on the prevention of the fetal alcohol syndrome, early identification and referral, and the enhancement of treatment capacities for women. Three levels of effort were proposed to the Secretary for his consideration. We are presently awaiting his decision as to the level of departmental involvement. We are not waiting idly

for his approval, but are going ahead with those activities which are feasible under our existing budget.

I see this workshop as an important part of NIAAA's effort with women and alcohol. The proceedings of the workshop will be available for public distribution, but more importantly will help direct our research program in relation to women. I wish to thank you for taking time from your busy schedule to be with us in these most pleasant surroundings for the next 3 days. I am looking forward to our deliberations, as I know each one of you has a great deal to share with us.

316-863 O - 80 - 2

I. Epidemiology of Male/ Female Drinking Over the Last Half Century

Introduction: Summary of the Literature

Henry Wechsler, Ph.D.

Today, drinking alcoholic beverages is a popular and acceptable social activity in American society. Although widespread throughout the population, drinking is not equally prevalent across all social and demographic groups. It is associated with certain characteristics such as age, sex, race, marital status, and social class.

Prior to the 1970s, studies consistently revealed striking differences in drinking patterns between the sexes. Researchers found that more men than women drank alcohol and that they did so more frequently and in greater quantities (Cahalan and Cisin 1968; Cahalan et al. 1969). In line with these findings, men were less likely to abstain from drinking (Cahalan et al. 1969).

Prior to the seventies, alcohol abuse and alcoholism were viewed primarily as problems of men. Male-female ratios of approximately 3:1 to 4:1 were found among the heavy drinkers in several self-report surveys (Cahalan et al. 1969; Mulford 1964). Two studies of rates of arrest for alcohol-related offenses (Zax et al. 1964, 1967) reported even higher ratios (8:1) and another (Jones 1971) reported 1955 results indicating that police arrested more men than women for drunkenness by the ratio of 11:1. Differences were also reported in the ratios of persons seeking help for alcohol problems. In a review of the literature on the female alcoholic, one researcher (Lindbeck 1972) noted a ratio of six males to one female alcoholic in mental hospitals and ratios of 2:1 and 1:1 in private practice. These studies suggest, in part, that women may not drink as frequently or as heavily in public (in fact, recent attention has been focused on the "closet alcoholics" among women) and/or that they may be more reluctant than men to seek treatment for their alcohol-related disorders.

The differences observed between the sexes in problem drinking may be related to other disorders since men and women usually exhibit different behaviors and psychopathology in conjunction with their drinking. In men, problem drinking is associated with acting-out behaviors, while, in women, it is associated with more

passive forms of behavior, such as depression and suicide attempts. One study (McClelland 1972) linked excessive drinking in men with an accentuated need for personalized power which led to forms of acting-out behaviors, such as speeding, accidents, and fights. When other investigators (Winokur and Clayton 1967; Winokur et al. 1970) examined hospitalized alcoholics, they found that a significant proportion of alcoholic women, but not men, were also diagnosed as having primary affective disorders. More male alcoholics were diagnosed as sociopathic.

In addition, sex has been found to interact significantly with a number of demographic variables such as social class (Mulford 1964; Knupfer and Room 1967), race (Cahalan et al. 1969; Bailey et al. 1965), religion (Knupfer and Room 1967), and ethnicity (Cahalan et al. 1969) in the determination of drinking patterns. Other studies have shown that the variable most closely related to sex differences in drinking is age. Drinking patterns of women and men appear to be most similar in the younger age categories (Bacon and Jones 1968), but show the largest differences in older age categories (Cahalan et al. 1969).

More recently, a number of studies, particularly among high school and college students, have indicated that the differences observed between men and women in drinking behaviors may be disappearing. One study using discriminant function analysis (Becker and Kronus 1977) found that differences in age, student status, and marital status were more significant variables than sex in the examination of differences in drinking behavior. A partial explanation of this is that the number of women drinkers has increased more rapidly than the number of men drinkers. A report to Congress (NIAAA 1971) highlighted the fact that much of the increase seen in the drinking population was attributed to women, but noted that women drinkers still numbered fewer than men drinkers and drank smaller quantities. Appearing at the same time, the first report (San Mateo County Department of Public Health and Welfare 1971) in a series of annual surveys of teenage alcohol and drug use conducted in San Mateo County, California, showed that between 1968 and 1971 the differences between boys and girls in reported use and frequent use of alcohol had decreased at most grade levels each successive year.

In a study conducted in two eastern Massachusetts communities in 1970-71 (Wechsler and Thum 1973), it was found that, although there were significant differences between girls and boys at the junior high school level in reported frequency of use of alcohol and intoxication, the differences at the senior high school level were not statistically significant; slightly more girls than boys

were found to abstain from alcohol (20 percent vs. 16 percent in one community; 31 percent vs. 25 percent in the other), but the distribution of students by type of beverage consumed and by intoxication frequency showed no sex differences.

The most recent San Mateo surveys (Blackford 1974) and a national survey of high school students (NIAAA 1974; Rachal et al. 1975) indicate that the proportion of girls who drink alcohol has begun to approach that of boys, whereas the quantity consumed per occasion by girls is still smaller than that drunk by boys.

The difficulty of analyzing sex-related drinking trends in the United States over the past half century is aptly illustrated by Blane and Hewitt's (1977) analysis of the alcohol and youth literature between 1960 and 1975. Studies are numerous, methods and approaches differ greatly, yet conclusions are similar. Measurement of drinking patterns is at best a tricky business. Such measurements normally are derived through survey research. The question that is most frequently raised about such self-report techniques is: How can you be sure that people tell the truth about their drinking patterns? Certainly, surveys have an inherent chance for errors in self-reporting. Nevertheless, the conclusion from most studies is that no matter what you measure, how you measure it, or where you measure it, men drink more than women. However, as pointed out previously, women's drinking has increased considerably—to the point that, among some groups at least, the differences are small. To illustrate these findings, I am going to report on three recent surveys conducted at The Medical Foundation in Boston. The first involved a questionnaire study of alcohol and drug use among adolescents in two eastern Massachusetts communities, the results of which will be compared to an earlier study in the same two communities.

Use of Alcohol Among Adolescents

Method

In November 1974, a questionnaire survey was conducted of a sample of approximately one-fifth of the students in grades 7-12 in two eastern Massachusetts communities which differed in socioeconomic characteristics (Wechsler and McFadden 1976). City A is semi-industrial, with a predominantly middle- and lower middle-class population. Town B is more residential and predominantly middle to upper middle class. In each community, a random sample of classrooms was selected at each grade level.

The students were asked to complete anonymous self-report questionnaires which were a revised version of an instrument used in 1970-71 in the same two communities, with almost identical wording of key alcohol and drug use questions. The participants were assured of the anonymity and confidentiality of their responses. They were told that their participation was voluntary and were asked to work individually. Of 1,751 students present in the sample classrooms on the day of the questionnaire administration, questionnaires were completed by all but 14 students.

For purposes of this paper, I will report on the answers to the questions: "How often did you drink beer, wine, or hard liquor during 1974?" and "During the past year, how often did you get drunk on beer, wine, or hard liquor?" The responses of students in grades 7-8 (junior high school) and grades 9-12 (high school) in each community were analyzed separately.

Results

Among junior high school students in both communities, a significantly larger proportion of boys than girls reported drinking beer and wine (see table 1). Approximately 60 percent of the boys in each community drank beer one or more times in 1974 compared with 50 percent of the girls in City A and 40 percent in Town B. In City A, 58 percent of the boys and 46 percent of the girls reported drinking wine during the year, and in Town B the respective percentages were 71 and 35. There were no significant differences between the sexes in reported use of hard liquor.

More than 9 out of 10 students of both sexes in grades 9-12 in the two communities reported drinking some alcohol during the year. Among students in grades 9-12 in Town B, there were no statistically significant differences between the sexes in the use of any of the three types of beverages. In City A, boys more frequently reported drinking beer (89 percent vs. 82 percent, which was significant at the .01 level). On the other hand, significantly more girls indicated that they drank wine during the year (75 percent vs. 60 percent), while there were only slight differences between the sexes in reported use of hard liquor.

A separate analysis was made of the frequency of alcohol use during the year, based on those who reported they drank alcohol more than 10 times in 1974 (see table 2). Among seventh and eighth graders, the only significant sex difference in the frequent use of alcohol was found in the use of beer in City A where 15 percent of the boys, compared with 8 percent of the girls, drank beer more than 10 times in 1974. Similarly, among senior high school students in both communities, only the use of beer showed

Table 1. Drinking Among High School Students, by Sex

	Grades 7-8				Grades 9-12			
	City A		Town B		City A		Town B	
	Boys (N=192)	Girls (N=196)	Boys (N=144)	Girls (N=128)	Boys (N=339)	Girls (N=350)	Boys (N=193)	Girls (N=174)
% Drinking one or more times in 1974								
Beer	61[a]	50[a]	60[b]	40[b]	89[b]	82[b]	80	77
Wine	58[a]	46[a]	71[c]	35[c]	60[c]	75[c]	76	71
Liquor	39	32	39	35	74	72	68	70
Any alcoholic beverage	78	69	83[a]	72[a]	95	94	92	92

[a] $P < .05$.
[b] $P < .01$.
[c] $P < .001$.

Table 2. Frequent Drinking Among High School Students, by Sex

	Grades 7-8				Grades 9-12			
	City A		Town B		City A		Town B	
	Boys (N=187)	Girls (N=190)	Boys (N=138)	Girls (N=124)	Boys (N=332)	Girls (N=341)	Boys (N=184)	Girls (N=172)
% Drinking more than 10 times in 1974								
Beer	15*	8*	8	5	45	39	37*	26*
Wine	4	3	17	9	6	8	21	24
Liquor	6	5	2	1	18	22	14	18

*$P < .05$.

a statistically significant difference between sexes in one of the communities; in Town B, 37 percent of the boys compared with 26 percent of the girls drank beer more than 10 times in 1974.

Reports of intoxication were also examined (see table 3). There were no statistically significant differences between boys and girls in grades 7-8 in reported intoxication on beer, wine, or hard liquor. As for intoxication on any beverage, there were no significant differences in Town B, but in City A significantly more boys than girls indicated intoxication on any form of alcohol (38 percent vs. 28 percent).

Among students in grades 9-12 in City A, there were no significant sex differences in the number who had been intoxicated on beer, wine, or hard liquor during the year. In Town B, however, significantly more girls than boys reported intoxication on wine (39 percent vs. 28 percent) and on hard liquor (53 percent vs. 42 percent), while a larger, though not statistically significant, proportion of boys said they had become intoxicated on beer during the year. When intoxication from any type of alcohol was examined, no statistically significant differences were found between boys and girls in grades 9-12 in either community.

Similar analyses were made for reports of frequent intoxication (intoxication five or more times during the year). Among seventh and eighth graders in both communities, there were no statistically significant differences between boys and girls in regard to frequent intoxication. There were also no significant differences between boys and girls in grades 9-12 in frequent intoxication on wine or hard liquor in either community, while in City A a significantly larger proportion of boys than girls (47 percent vs. 38 percent) reported being drunk on beer five or more times during the year.

Finally, all students were classified into one of six categories on the basis of whether they drank, what beverage they drank, and whether they had been intoxicated in 1974. Based on this classification, no statistically significant differences were found between the sexes among seventh and eighth graders. Among students in grades 9-12, significant differences between the sexes were found only in those reporting being drunk on hard liquor five or more times in 1974; in City A, 30 percent of the girls vs. 23 percent of the boys fell into this classification, and in Town B the respective figures were 19 percent and 14 percent.

This study of alcohol use among secondary school students in two Massachusetts communities found few differences between high school boys and girls in patterns of alcohol consumption. Those differences which appeared were largely confined to stu-

Table 3. Intoxication Among High School Students, by Sex

	Grades 7-8				Grades 9-12			
	City A		Town B		City A		Town B	
	Boys (N=198)	Girls (N=197)	Boys (N=146)	Girls (N=128)	Boys (N=342)	Girls (N=355)	Boys (N=197)	Girls (N=174)
% Intoxicated one or more times in 1974								
Beer	33	25	16	14	68	62	52	45
Wine	16	12	10	13	24	29	28*	39*
Liquor	25	19	14	12	56	63	42*	53*
Any alcoholic beverage	38*	28*	26	25	74	72	64	63

*P < .05.

dents in grades 7-8 and to the reported use of and intoxication on beer. Where differences existed among students in grades 9-12 in the use of wine and hard liquor, girls exceeded boys in use and intoxication.

As mentioned earlier, a similar survey of high school students in the same two eastern Massachusetts communities had been conducted in 1970-71 (Wechsler and Thum 1973). In comparison to the 1970-71 study, the 1974 re-survey of high school students in the same two communities indicated that the proportion of high school students who reported they abstain from alcohol use had decreased among both boys and girls (see table 4). Additionally, although the classification by intoxication was not comparable between the two studies, the difference between the sexes in the proportion who reported being drunk decreased between 1970-71 and 1974, when the proportion of girls almost equalled that of the boys in reported intoxication.

Since these studies indicated that sex differences in adolescent alcohol use were a disappearing phenomenon, our next step was to examine drinking patterns in an adult population to determine whether these findings applied to an older age group.

Table 4. Comparison of Rates of Abstention and Intoxication Between 1970-71 and 1974, by Sex

	City A		Town B	
	1970-71	1974	1970-71	1974
% Reporting:				
No use of beer, wine, or hard liquor during the year:				
Boys	16	13	25	14
Girls	20	17	31	17
% Reporting:				
Being drunk* one or more times during the year:				
Boys	53	61	29	48
Girls	44	56	24	47

*1970-71—drunk = "hard liquor users who were also drunk on any alcoholic beverage in the past year."
1974 —drunk = "drunk on any alcoholic beverage in 1974."

Use of Alcohol by an Adult Population

Method

In 1974, a comprehensive household survey was conducted in the Boston metropolitan area. An area probability sample of all housing units in the Boston Standard Metropolitan Statistical Area (SMSA) was drawn. At each of 3,800 housing units selected, an interviewer obtained an enumeration of all household members. By random selection, the respondent was chosen from among all persons 18 years of age or older in each household. Subsequently, 1,043 persons in 52 cities and towns in the Boston SMSA received a detailed interview.

The survey instrument contained more than 1,000 data items and took slightly less than 1 hour to administer. Because of time limitations, only two questions on alcohol use were included. The questions were derived from the Cahalan et al. survey of American drinking practices (1969) and sought information on the frequency of consumption of any type of alcohol and the number of drinks consumed each time. For each of these variables, the respondent was asked to indicate whether these behaviors occurred nearly every time, more than half the time, less than half the time, once in a while, or never.

Information on drinking behaviors was not available for 59 respondents; for the remaining 984, respondents were categorized by The Medical Foundation as abstainers, infrequent drinkers, light drinkers, moderate drinkers, and heavy drinkers, using the system devised by Cahalan et al. (1969).

Results

Significant differences in drinking behaviors by sex were found (Wechsler, Demone, and Gottlieb 1978). Over three times as many men as women (38 percent vs. 12 percent) were in the heavy drinker category (see table 5). In contrast, almost twice as many women as men (40 percent vs. 23 percent) were classified as abstainers or infrequent drinkers. The differences between men and women were statistically significant beyond the .001 level.

Statistically significant differences between men and women were also found in each of six age categories examined (see table 6). Furthermore, in each age category, the proportion of men found in the heavy drinker category was more than twice that of women. By sex, age was related to drinking and nondrinking among both men and women at the .001 level of significance. Among men in particular, the proportion of abstainers increased

Table 5. Drinking Typology, by Sex

	Male (N=421) %	Female (N=563) %
Drinking typology		
Abstainer	12.6	19.7
Infrequent drinker	10.2	20.8
Light drinker	22.6	35.5
Moderate drinker	16.6	12.1
Heavy drinker	38.0	11.9

$x^2 = 112.08, 4df, p < .001.$

directly with age and the proportion of heavy drinkers decreased. The same was true for women, with the exception that the three youngest age groups (18-24, 25-34, and 35-44 years of age) basically did not differ with regard to abstention.

Statistically significant differences at the .001 level were also found between sexes by race (see table 7). By sex, however, black men and white men did not differ from each other in drinking behavior while, among women, the difference between races was significant at the .01 level. The proportion of black women classified as abstainers was more than twice that of white women (36 percent vs. 17 percent), while one-fourth of the white women fell into the moderate and heavy drinker categories compared with one-sixth of the black women.

Drinking was found to be significantly related to marital status for both men and women as well as between sexes, with the exception that widowed men did not differ significantly from widowed women (see table 8). In the divorced or separated marital status category, 58 percent of the men were classified as heavy drinkers compared with 24 percent of the women. In the single (never married) and married categories, men were almost four times as likely as women to be classified as heavy drinkers. For both sexes, the proportion of those classified as heavy drinkers was highest in the divorced or separated category.

When respondents were classified into upper (I-III), middle (IV), and low (V) social class levels on the basis of the Hollingshead Scale (1957), drinking was found to be significantly related to social class among both men and women as well as between sexes (see table 9). In the low social class, men were four times as likely as women to be classified as heavy drinkers while, in the

Table 6. Drinking Typology, by Sex and Age

	Age (Males)					
	18-24 (N=69) %	25-34 (N=110) %	35-44 (N=59) %	45-54 (N=62) %	55-64 (N=61) %	65+ (N=58) %
Drinking typology						
Abstainer	2.9	8.2	15.3	14.5	16.4	22.4
Infrequent drinker	7.2	6.4	10.2	8.1	19.7	13.8
Light drinker	20.3	22.7	20.3	12.9	26.2	32.8
Moderate drinker	15.9	15.5	18.6	30.6	8.2	12.1
Heavy drinker	53.6	47.3	35.6	33.9	29.5	19.0

$x^2 = 51.86$, 20df, $p < .001$.

	Age (Females)					
	18-24 (N=81) %	25-34 (N=130) %	35-44 (N=77) %	45-54 (N=78) %	55-64 (N=88) %	65+ (N=100) %
Drinking typology						
Abstainer	13.6	6.9	13.0	19.2	27.3	37.0
Infrequent drinker	17.3	17.7	23.4	25.6	18.2	26.0
Light drinker	30.9	39.2	42.9	35.9	35.2	29.0
Moderate drinker	17.3	19.2	7.8	10.3	10.2	5.0
Heavy drinker	21.0	16.9	13.0	9.0	9.1	3.0

$x^2 = 68.83$, 20df, $p < .001$.

Males vs. females, 18-24 years: $x^2 = 20.54$, 4df, $p < .001$.
Males vs. females, 25-34 years: $x^2 = 29.65$, 4df, $p < .001$.
Males vs. females, 35-44 years: $x^2 = 19.18$, 4df, $p < .001$.
Males vs. females, 45-54 years: $x^2 = 31.68$, 4df, $p < .001$.
Males vs. females, 55-64 years: $x^2 = 11.60$, 4df, $p < .05$.
Males vs. females, 65+ years: $x^2 = 18.16$, 4df, $p < .01$.

middle and upper classes the ratio was 3:1. By sex, the differences in those classified as heavy drinkers were not as pronounced as differences in classification by abstention and infrequent drinking. When abstainers and infrequent drinkers were combined, 62 percent of the women in the low social class were in that category compared with 36 percent in the middle and 25 percent in the upper social classes. Similarly, among men this category included 34 percent of those in the low social class compared with 20 percent in the middle and 16 percent in the upper social classes.

Table 7. Drinking Typology, by Sex and Race

	Males	
	Black (N=46) %	White (N=365) %
Drinking typology		
Abstainer	13.0	12.6
Infrequent drinker	8.7	10.1
Light drinker	23.9	21.9
Moderate drinker	15.2	17.3
Heavy drinker	39.1	38.1

$x^2 = 0.28$, 4df, n.s.

	Females	
	Black (N=66) %	White (N=482) %
Drinking typology		
Abstainer	36.4	17.0
Infrequent drinker	21.2	19.7
Light drinker	25.8	37.6
Moderate drinker	6.1	13.3
Heavy drinker	10.6	12.4

$x^2 = 16.14$, 4df, $p < .01$.

Males vs. females, black: $x^2 = 20.38$, 4df, $p < .001$.
Males vs. females, white: $x^2 = 91.65$, 4df, $p < .001$.

In this study of alcohol use by an adult population, statistically significant differences were consistently found between the sexes even in the youngest age group (18-24 years of age). However, as noted earlier, relatively few differences between sexes had been found in the studies of drinking among high school students. Our studies do not permit a definite conclusion concerning these differences. A possible conclusion might be that drinking by students in high school is an activity that differs from drinking by adults in the community. Furthermore, the peer group influence often associated with high school drinking may be diminished in the adult population. To place these findings in proper perspec-

316-863 O - 80 - 3

Table 8. Drinking Typology, by Sex and Marital Status

	Males			
	Married (N=267) %	Divorced or Separated (N=31) %	Widowed (N=15) %	Single, Never Married (N=106) %
Drinking typology				
Abstainer	15.4	12.9	6.7	6.6
Infrequent drinker	10.9	12.9	20.0	6.6
Light drinker	24.0	9.7	33.3	21.7
Moderate drinker	17.2	6.4	26.7	15.1
Heavy drinker	32.6	58.1	13.3	50.0

$x^2 = 26.19$, 12df, $p < .02$.

	Females			
	Married (N=273) %	Divorced or Separated (N=76) %	Widowed (N=95) %	Single, Never Married (N=117) %
Drinking typology				
Abstainer	15.8	19.7	30.5	20.5
Infrequent drinker	23.4	21.1	18.9	15.4
Light drinker	38.5	25.0	33.7	36.8
Moderate drinker	12.5	10.5	8.4	15.4
Heavy drinker	9.9	23.7	8.4	12.0

$x^2 = 26.74$, 12df, $p < .01$.

Males vs. females, Married: $x^2 = 56.49$, 4df, $p < .001$.
Males vs. females, Divorced or separated: $x^2 = 12.00$, 4df, $p < .02$.
Males vs. females, Widowed: $x^2 = 7.01$, 4df, n.s.
Males vs. females, Single, never married: $x^2 = 42.60$, 4df, $p < .001$.

tive, an examination of a different population was needed, and we decided to survey college students from the same geographic area who are the same age as the youngest group in the adult survey and who share the same type of educational environment as the high school students. We wanted to examine whether sex differences in alcohol consumption by college students paralleled those of the general population or those of high school students.

Table 9. Drinking Typology, by Sex and Social Class*

	Males		
	Low (N=114) %	Middle (N=123) %	Upper (N=164) %
Drinking typology			
Abstainer	18.4	11.4	10.4
Infrequent drinker	15.8	8.9	6.1
Light drinker	13.2	22.0	27.4
Moderate drinker	13.2	12.2	22.6
Heavy drinker	39.5	45.5	33.5

$x^2 = 25.43$, 8df, $p < .01$.

	Females		
	Low (N=163) %	Middle (N=185) %	Upper (N=192) %
Drinking typology			
Abstainer	31.9	17.3	9.9
Infrequent drinker	30.1	18.4	15.1
Light drinker	21.5	36.8	46.4
Moderate drinker	7.4	11.9	17.7
Heavy drinker	9.2	15.7	10.9

$x^2 = 59.50$, 8df, $p < .001$.

Males vs. females, Low: $x^2 = 36.57$, 4df, $p < .001$.
Males vs. females, Middle: $x^2 = 34.68$, 4df, $p < .001$.
Males vs. females, Upper: $x^2 = 43.54$, 4df, $p < .001$.

*As determined by the Hollingshead Two-Factor Index of Social Position (1957).

Use of Alcohol Among College Students

Method

A questionnaire survey of alcohol consumption among students at 34 New England colleges was conducted in the spring of 1977*. The colleges, located in five of the New England States, represented State and private universities and colleges in urban, suburban, and rural settings, both coeducational and all-women colleges, and large and small colleges. All were 4-year institutions offering programs leading to bachelor's degrees.

From each of the 34 colleges, we selected a random sample, which included full-time undergraduate students and both commuting and resident students. The number of students chosen from each college ranged from 50 to 400, depending on total enrollment, whether the college was coed, and the ratio of men to women. The final study sample included 5,000 men and 5,500 women.

Questionnaires were sent to each student with a covering letter explaining the reason for the survey, the sampling techniques, the two followup mailings to nonrespondents, and the anonymous nature of the questionnaire. Procedures to safeguard the respondents' anonymity and the confidentiality of their responses were described. It was also explained that participation was voluntary and that they were free to disregard questions they did not wish to answer.

The 15-page questionnaire contained items on alcohol use, the social context of its use, reasons for drinking, problems associated with drinking, use of substances other than alcohol, common adjustment difficulties and stresses experienced by college students, and demographic variables.

Of the original sample, 263 students were eliminated because they were no longer at the college. Questionnaires were returned by 7,345 students (7,170 responses were received from the first and second mailings, 175 from the third), providing a total response rate of 72 percent. The analyses of data were based on responses to the first and second mailings only and included 3,185 college men and 3,898 college women. (Information on the student's sex was not available for 88 respondents.)

*Mary McFadden served as project coordinator on this survey.

Results

Unlike the studies of alcohol use among high school students where few differences were found between the sexes, this study of drinking among college students revealed a number of statistically significant differences. To begin with, men differed from women in self-descriptions of alcohol use (see table 10). More than one-third of the men described themselves as moderate drinkers compared with only one-fifth of the women. Conversely, more than one-third of the women considered themselves infrequent drinkers compared with almost one-fourth of the men. Analyses also indicated that, among the men, the proportion of infrequent drinkers progressively decreased between the freshmen and senior years, while self-descriptions of alcohol use did not differ among women by class level. The proportion who described themselves as abstainers was basically the same for

Table 10. Students' Self-Descriptions of Alcohol Use by Class and Sex*

	Males			
	Freshmen (N=780) %	Sophomores (N=741) %	Juniors (N=745) %	Seniors (N=850) %
Abstainer	5.0	5.5	5.1	3.8
Infrequent drinker	27.3	25.1	24.7	20.7
Light drinker	31.7	31.6	27.0	33.3
Moderate drinker	32.4	34.4	37.6	35.2
Heavy/Problem drinker	3.6	3.4	5.6	7.0

$x^2 = 33.96$, 12df, $p < .001$.

	Females			
	Freshmen (N=1,041) %	Sophomores (N=946) %	Juniors (N=895) %	Seniors (N=944) %
Abstainer	6.1	5.6	5.8	5.2
Infrequent drinker	34.6	38.2	34.4	36.5
Light drinker	37.0	32.5	37.5	35.6
Moderate drinker	21.7	22.0	21.5	21.1
Heavy/Problem drinker	0.7	1.8	0.8	1.6

$x^2 = 15.23$, 12 df, n.s.

*Males vs. females: $x^2 = 283.27$, 4df, $p < .001$.

both sexes (about 5 percent)—a finding which is in sharp contrast to an often-cited national study conducted in 1950 (Straus and Bacon 1952), when 20 percent of college men and 39 percent of the women considered themselves abstainers. The 1950 study also indicated that 21 percent of the men and 35 percent of the women had had their first drink in college. The present survey indicated that 93 percent of the men and 89 percent of the women had had their first drink *before* college.

Reported frequency of drinking also revealed a statistically significant difference between the sexes (see table 11). Among the men, more than two out of three reported drinking alcohol at least once a week, and the reported frequency of drinking increased at each class level to the point where as many as one out of eight seniors reported drinking nearly every day. Frequency of drinking was not as great among women nor were increases found by class level. Half the women reported drinking at least once a week; only 2 percent reported drinking nearly every day.

Table 11. Frequency of Drinking Alcohol, by Class and Sex*

	Males			
	Freshmen (N=781) %	Sophomores (N=745) %	Juniors (N=747) %	Seniors (N=849) %
Not in 1976	2.9	4.0	3.6	3.2
Less than weekly	31.7	28.4	26.5	22.3
1-4 times/week	60.0	60.4	60.8	62.1
Nearly every day or more often	5.4	7.2	9.1	12.4

$x^2 = 41.29$, 9df, $p < .001$.

	Females			
	Freshmen (N=1,043) %	Sophomores (N=949) %	Juniors (N=899) %	Seniors (N=939) %
Not in 1976	4.3	3.8	4.0	3.9
Less than weekly	43.4	46.4	46.4	46.6
1-4 times/week	50.6	47.1	47.6	46.3
Nearly every day or more often	1.7	2.7	2.0	3.2

$x^2 = 10.36$, 9df, n.s.

*Males vs. females: $x^2 = 340.20$, 3df, $p < .001$.

In terms of type and quantity of alcohol consumed, statistically significant differences were found between sexes (see table 12). Beer, identified as the favorite beverage of New England college men, was reported consumed more frequently and in greater quantity by men than by women; both differences were significant beyond the .001 level (see table 13). Wine was the least commonly consumed alcoholic beverage among college students; only 12 percent of the men and 18 percent of the women reported drinking wine at least once a week. While women were significantly more likely than men to report drinking wine, men surpassed women in quantity usually consumed. Similarly, significantly higher proportions of women reported drinking liquor, yet less than half reported usually having more than two drinks compared with almost 6 out of 10 men (see table 14).

Students were asked where and in what interpersonal settings they drank. The findings indicated that, for both men and women at all class levels, the most popular place was a nightclub, bar, or tavern, and the most popular setting for drinking was in small groups of 10 persons or less, with members of both sexes present.

Table 12. Frequency of Drinking Beer and Quantity Usually Consumed, by Sex

	Males	Females
	(N=2,997) %	(N=3,660) %
Frequency		
Not in 1976	4.8	23.2
Less than weekly	32.3	49.1
1-4 times/week	55.1	26.4
Nearly every day or more often	7.9	1.3
$x^2 = 1{,}002.75$, 3df, $p < .001$.		
	(N=2,853) %	(N=2,805) %
Quantity usually consumed		
1-2 cans (or 12 oz. bottles)	34.7	59.8
3-4 cans	33.4	29.4
5 cans	8.0	5.2
6-pack or more	23.9	5.5
$x^2 = 536.16$, 3df, $p < .001$.		

Table 13. Frequency of Drinking Wine and Quantity Usually Consumed, by Sex

	Males (N=2,995) %	Females (N=3,668) %
Frequency		
Not in 1976	13.6	8.7
Less than weekly	74.5	73.6
1-4 times/week	11.3	16.7
Nearly every day or more often	0.6	1.0
$x^2 = 75.57$, 3df, $p < .001$.		
	(N=2,605) %	(N=3,373) %
Quantity usually consumed		
1-2 glasses (6 oz.)	64.7	69.0
3 glasses	20.8	21.1
4 or more glasses	14.5	9.9
$x^2 = 30.67$, 2df, $p < .001$.		

Women reported drinking primarily when men were present, while men frequently reported drinking in small groups of the same sex.

Among the college students responding to this survey, drunkenness was not a rare occurrence for either sex, although it did show a statistically significant difference between the sexes at the .001 level (see table 15). Explaining that "by drunk we mean when alcohol causes you to lose control of physical activities, or to get very unsteady, aggressive, or sick to your stomach," we found that more than five out of six men and close to three out of four women reported having been drunk at least once. Again, this contrasts sharply with the findings of the 1950 study (Straus and Bacon 1953) in which two-thirds of the men and only one-fifth of the women reported ever having been drunk. While the numbers are small, the present survey also indicated that, in terms of frequency, 9 percent of the men and 3 percent of the women reported being drunk at least once a week.

In other consequences resulting from drinking, the proportion of men reporting such occurrences was greater than the proportion of women; the differences were greatest for four consequences

Table 14. Frequency of Drinking Liquor and Quantity Usually Consumed, by Sex

	Males (N=3,017) %	Females (N=3,697) %
Frequency		
Not in 1976	7.7	4.7
Less than weekly	65.7	67.6
1-4 times/week	25.4	26.7
Nearly every day or more often	1.2	0.9
$x^2 = 27.33$, 3df, $p < .001$.		
	(N=2,809) %	(N=3,556) %
Quantity usually consumed		
1-2 drinks*	42.9	54.6
3-4 drinks	38.8	38.1
5 or more	18.3	7.3
$x^2 = 200.21$, 2df, $p < .001$.		

*Containing about 1½ oz. of straight liquor.

Table 15. Reported Drunkenness, by Sex

	Males (N=3,008) %	Females (N=3,681) %
Frequency		
Never	15.7	29.0
Not in 1976	13.2	16.6
Less than once a month	36.8	37.7
1-3 times a month	24.9	14.0
Once a week or more	9.4	2.7
$x^2 = 376.65$, 4df, $p < .001$.		

(see table 16). Among the men, one-fourth had had trouble with authorities and one-fifth had gotten into a physical fight as a result of drinking. Ten percent of the men also reported that drinking had caused them to have an automobile accident, and another 10 percent reported being involved in other types of accidents in which someone had been hurt. With the exception of trouble with authorities, which was reported by 7 percent of the women, problems caused by drinking were reported by less than 5 percent of the female college students. When the frequency with which a student had been involved in an accident or participated in a fight as a result of drinking was examined, this survey indicated that 30 percent of the men and 7 percent of the women reported such difficulties, a difference which was significantly beyond the .001 level.

Two aspects of drinking have been reported in the literature as signs of possible problem drinking — drinking alone and drinking before noon. An examination of these behaviors showed statistically significant differences between the sexes at the .001 level (see table 17). Forty-two percent of the men, compared with 26 percent of the women, reported drinking alone at least once in a while. As for drinking before noon, 35 percent of the men and 19 percent of the women reported doing so at least once.

In this survey of alcohol use among New England college students, a few questions elicited information on the use of other

Table 16. Adverse Consequences of Drinking, by Sex

	Males (N ~ 2,990)	Females (N ~ 3,665)
Percent of students who, as a result of drinking, ever:		
Forgot where they were, what they did	54.2	42.0
Did or said something wouldn't have otherwise	80.6	74.8
Went without things because of cost of alcohol	18.8	11.2
Lost a friend or damaged a friendship	9.7	4.7
Got in trouble with authorities	24.2	6.6
Got into physical fights	20.7	2.0
Had an automobile accident	9.6	2.2
Had any other accident in which someone was hurt	9.8	4.0

Table 17. Signs of Drinking Problems, by Sex

	Males	Females
	(N=2,916) %	(N=3,564) %
Drink alone		
At least once in a while	41.6	25.5
Never	58.4	74.5
$x^2 = 188.55$, 1df, $p < .001$.		
	(N=3,007) %	(N=3,687) %
Drink before noon		
At least once	34.8	19.0
Never	65.2	81.0
$x^2 = 213.64$, 1df, $p < .001$.		

substances. The findings on cigarette smoking not only revealed a statistically significant difference between the sexes but also indicated, in contrast to the past, that more women than men now smoke—33 percent of the female college students reported smoking, compared with 23 percent of the men (see table 18). Statistically significant differences (but in reverse) also were found between the sexes in the use of marijuana; 30 percent of the men reported using marijuana at least once a week, compared with 17 percent of the women (see table 19). In comparison to use of marijuana, the reported use of other illicit drugs was negligible. Nevertheless, for all substances listed, men were more likely than women to report the illicit use of these at least once in 1976, and in the case of cocaine, hallucinogens, and heroin or opium, the differences were significant.

With individual components of the drinking patterns of New England college students described, the question now arises as to how these students can be grouped into some classification by alcohol consumption. Researchers have not been able to agree on the best classification system. Factors that are usually considered include: frequency of drinking, quantity usually consumed, variability in drinking habits, type of alcohol consumed, drunkenness and other consequences of drinking. The major problem is that all systems are evaluative in nature. For example, the highest drinking category usually is given the label "heavy drinker." This

label gives no indication of what describes a heavy drinker: Is he one who has many drinks on a weekend night but none during the week? Or one who drinks a highball every night? To avoid getting involved in such issues, some researchers have attempted to categorize drinking on the basis of consequences and resulting behaviors.

Table 18. Cigarette Smoking, by Sex

	Males (N=3,093) %	Females (N=3,810) %
Has never smoked	68.1	56.0
Has quit smoking	9.0	10.9
Smokes less than a pack/day	13.3	20.1
Smokes a pack or more/day	9.6	12.9

$x^2 = 109.24$, 3df, $p < .001$.

Table 19. Use of Marijuana and Other Substances, by Sex

	Males (N=3,090) %	Females (N=3,804) %
Use of Marijuana		
Never	28.2	35.2
Not in 1976	8.0	10.0
Less than once a week	34.2	37.4
Once a week or more	29.6	17.4

$x^2 = 151.57$, 3df, $p < .001$.

	(N~3,091) %	(N~3,805) %
Use of other substances in 1976		
Cocaine*	13.7	8.3
Hallucinogens*	10.6	5.0
Amphetamines—"uppers"	7.9	6.1
Depressants—"downers"	5.4	4.3
Heroin or opium*	1.9	0.7

*Reported use of this substance was statistically significant at the .001 level between males and females.

For this study, we decided to use two classification systems. The first involved a drinking typology based on quantity and frequency. Students were classified as drinking a "heavy" amount if they reported that during one sitting they usually drank more than a six-pack of beer, five or more glasses of wine, or five or more drinks with 1.5 ounces of straight liquor in them. Students were said to drink a "medium heavy" amount if they usually drank five or six cans of beer, four glasses of wine, or four drinks with liquor; or a "medium light" amount if they usually drank four cans of beer, three glasses of wine, or three drinks with liquor. Students were classified as drinking a "light" amount if they usually drank no more than three cans of beer, two glasses of wine, or two drinks with liquor during one sitting.

In terms of frequency, students were divided into four groups based on how often they usually drank any type of alcohol: (1) less than monthly (but on at least one occasion in 1976); (2) one to three times a month; (3) one to two times a week; and (4) more than twice a week. Those students who said they never drank alcohol, or who did not drink any alcohol in 1976, were classified as abstainers.

Based on a combination of these quantity-frequency measures, we arrived at six categories of drinking: abstainers, infrequent-light, frequent-light, intermediate, infrequent-heavy, and frequent-heavy drinkers. This classification of students resulted in a statistically significant difference between sexes (see table 20). Among both sexes, 3 to 4 percent were abstainers, while 15 percent of the men and 29 percent of the women were labelled infrequent-light. In contrast, 29 percent of the men were part of the frequent-heavy category compared with 11 percent of the women. Thus, men exceeded women in the frequent-heavy drinking category by about three to one, while women exceeded men in the infrequent-light category by about two to one.

With this classification system, the findings paralleled those based on the students' self-descriptions of their drinking behaviors. More students, however, describe themselves as lighter drinkers than our findings indicate.

Students' reports of high school drinking (which revealed significant differences between the sexes) were remarkably similar to their classification by current drinking practices (see table 21). For example, among those college students classified as current abstainers, 53 percent of the men and 75 percent of the women never drank in high school. By marked contrast, less than 3 percent of the frequent-heavy drinking men and women reported never drinking in high school. The overall findings indicated that

Table 20. Drinking Typology, by Class and Sex*

	Males			
	Freshmen (N=777) %	Sophomores (N=742) %	Juniors (N=746) %	Seniors (N=844) %
Abstainers	3.0	4.0	3.6	3.2
Infrequent light	18.0	15.0	16.4	12.6
Frequent light	13.9	18.7	21.2	26.3
Intermediate	31.4	33.6	26.5	24.9
Infrequent heavy	4.0	3.5	2.3	2.1
Frequent heavy	29.7	25.2	30.0	30.9

$x^2 = 67.14$, 15df, $p < .001$.

	Females			
	Freshmen (N=1,038) %	Sophomores (N=948) %	Juniors (N=896) %	Seniors (N=937) %
Abstainers	4.3	3.8	4.0	3.9
Infrequent light	25.8	29.5	30.1	31.5
Frequent light	15.7	16.0	18.9	23.2
Intermediate	38.2	37.4	34.8	29.7
Infrequent heavy	3.1	2.1	2.3	2.2
Frequent heavy	12.8	11.1	9.8	9.5

$x^2 = 45.90$, 15df, $p < .001$.

*Males vs. females: $x^2 = 464.60$, 5df, $p < .001$.

the students in our sample established their patterns of drinking before they entered college. For the most part, those who drank frequently in high school reported doing the same in college, while those who abstained in high school continued to do so.

In addition to categorizing drinkers on the basis of a quantity-frequency typology, we attempted to identify a group of students that most people would agree contained a high proportion of problem drinkers. As has been pointed out by other researchers, one cannot assume that regular drinking of large quantities automatically constitutes problem drinking. For example, it should not be construed that all of the students included in our "frequent-heavy" drinking category are either alcoholics or are on their way to becoming alcoholics. However, within this category, we identified a smaller group who reported becoming drunk at

Table 21. Drinking in High School, by Drinking Typology and Sex*

	Males					
	Abstainers (N=107) %	Infrequent light (N=479) %	Frequent light (N=636) %	Intermediate (N=895) %	Infrequent heavy (N=93) %	Frequent heavy (N=917) %
Frequency						
Never	53.3	13.6	4.1	3.8	8.6	1.7
Less than once a month	27.1	54.3	20.0	22.7	28.0	7.3
1-3 times a month	11.2	25.7	41.3	43.7	34.4	31.1
Once a week or more	8.4	6.4	34.6	29.8	29.0	59.9
	Females					
	Abstainers (N=157) %	Infrequent light (N=1,113) %	Frequent light (N=712) %	Intermediate (n=1,340) %	Infrequent heavy (N=92) %	Frequent heavy (n=417) %
Frequency						
Never	75.2	12.9	4.9	4.1	7.6	2.6
Less than once a month	19.1	55.6	23.4	29.7	35.9	10.3
1-3 times a month	3.8	24.3	44.1	42.2	28.3	30.4
Once a week or more	1.9	7.1	27.5	24.0	28.3	56.6

*Males vs. females: $x^2 = 190.92$, 3df, $p < .001$.

least once a week. This group included 244 men (8 percent of the men whose drinking typology could be classified) and 68 women (2 percent of the women). In other words, men were four times as likely as women to fall into this group.

In summary, this survey of New England college students indicated that drinking of alcoholic beverages is a common activity: Nearly all students drink alcohol, and regular drinking (at least weekly), drinking in sizeable quantities, and drunkenness are not at all uncommon. In almost all instances, differences between the sexes were found. Men reported greater frequency of drinking, consumption of larger quantities, and more intoxication than women. Furthermore, men appear to drink more frequently as they progress through college. A similar increase was not found among the women. This may be due, in part, to the fact that beer was clearly the beverage of choice among men (but was selected by only 13 percent of the women) and that beer drinking is such a popular activity among college students. Furthermore, men reported drinking in groups with other men almost as frequently as drinking in mixed groups. Women, on the other hand, most frequently drank in the company of men—either in groups or on a one-to-one basis.

Research Findings

What may we conclude from these three studies? They concern different age populations in the same geographic area, yet they reveal results similar to those found in national studies. Most American men and women drink alcoholic beverages. Men, however, drink more frequently and in larger quantities and become drunk more often than do women, both in the general population and in college students. In high school students, these differences are small and often statistically insignificant with the exception of the consumption of beer, which males drink more often and in greater quantity than females among all subpopulations.

As mentioned earlier, the data on alcohol use by college students show that women drink in different interpersonal settings and seem to drink for different reasons than men. While women are less likely than men to exhibit acting-out behaviors as a result of drinking, other data from the survey of college students indicate that women who drink, particularly those who report heavy drinking, report more emotional and mental health problems and pressures than men. This is in line with other findings suggesting that women with drinking problems are "sicker" than their male counterparts.

Research Recommendations

A number of issues require further research and explanation before drinking patterns, particularly those of women, can be more fully understood. I will list several of these but hope that the discussion of this paper will lead to a delineation of other unresolved areas.

1. The categorization of drinking patterns has been attempted by a number of researchers in a number of different ways. We have alluded to the problem in this paper. *For the researcher, a determination of the best means of categorizing heavy drinking, drinking problems, alcohol abuse and alcoholism in specific operational ways has not been resolved.* Furthermore, this problem is compounded in studying women's drinking since most of the systems and categories employed are sexist—based on either quantity, frequency, drunkenness, or acting-out behavior. The types of behavior more characteristic of women with alcohol problems, such as depression and suicide, are not included in these indices. Thus, studies may underestimate the size and degree of alcohol problems among women.
2. *More research on beer drinking among women is needed.* Thus far, women prefer beer much less than do men. With the growing advertising of low calorie (light) beer, women's preference for this beverage should be monitored, since the college data indicate that, for this group of women, concerns about weight and diet are strong.
3. *More research is needed on maturation of women and their patterns of alcohol consumption.* For example, women appear to equal men in drunkenness in their senior year of high school but not during college. In the college years, our data suggest that young women may increase light consumption while heavy consumption decreases between their freshmen and senior years. Men, on the other hand, continue to increase their drinking through the college years.
4. *More research is needed on the social context of drinking among women and the reasons which women give for drinking, which generally differ from those given by men.* Similarly, more research is needed on the often-cited findings of more psychological problems among women who drink heavily than among men. While all of these phenomena have been repeatedly demonstrated, no explanation has been given for the different findings in men and women.

316-863 O - 80 - 4

Discussion Summary

Discussion Leaders: Kaye Middleton Fillmore, Ph.D.
Joan Curlee-Salisbury, Ph.D.

Dr. Fillmore presented the following comments:

I think a question should be raised. Are we talking about the epidemiology of drinking or the epidemiology of pathological drinking? Historically, there has been an enormous emphasis on heavy drinking and pathological drinking geared to and guided by the drinking of men. Historically, both have become stereotyped — stereotypes again geared to and guided by men. For myself, my interest is in the spectrum of drinking which includes, I might add, the positive effects of drinking, among both men and women.

In this light, I think the first thing we can agree upon, given our current research, is that the majority of adults in the United States drink in such a way that beverage alcohol does not play a major role in their lives (Mulford, Cahalan, Armor, etc.). We should note that a relatively small proportion of the adult population qualifies as heavy drinkers (five or more drinks nearly every day or the equivalent) and that men are overrepresented in this group.

Although per capita consumption has increased since World War II, the pattern of consumption has not changed that much (Room and Beck; Armor); what did happen was that the proportion of drinkers who sometimes drink to the point of intoxication slightly increased. Among women, more became moderate drinkers. Such findings represent analyses of trends, not individuals. Analyses of trends, especially in reference to demographic variables, are difficult for two reasons. First, results can differ by using different operational definitions. Second, relationships between demographic variables may vary with historical, cohort, and aging effects in their interaction with other demographic variables. Even with these problems, as Dr. Wechsler points out, the majority of heavy drinking occurs among the young. For whatever reasons, we know that the majority of young people who are heavy drinkers or problem drinkers grow out of these

behaviors, and the subsequent younger group replaces them. Thus, with age, drinking becomes more frequent but less heavy per occasion.

If we look at the survey research done in this area, I think we can generally agree that men get into much more trouble, certainly visible or acting-out trouble, than women, even controlling by age. Why is this so? If we go to the literature in other areas of deviance, we find the same phenomenon. In other words, it isn't confined to the deviant use of alcohol. Overall, we may suggest that sex roles and expectations are still a part of the social order, women's lib or no women's lib. Ladies are expected to act like ladies and, for the most part, indeed they do. As Clark has put it, women are the "culture-bearers" in Western European societies, while men, especially young men, are allowed more license.

One can always argue, however, that more women than men are hiding their alcohol problems with a bottle of gin in the broom closet, but as Rubington points out, alcoholism among men *and* women is generally well concealed. One can also argue that when we ask questions to operationalize our problem drinking definitions, these definitions are aimed toward the men rather than the women. There may be some truth to this argument—something we recently tried to correct in the second measurement point of a 25-year longitudinal study. We probed into a variety of behaviors, attitudes, and consequences of drinking in the primary family which our exploratory research suggested might be geared to women with alcohol problems. Included in the research were questions on neglect of children and spouse, nonfulfillment of domestic and childraising responsibilities, disentanglement of varieties of verbal aggression versus physical aggression and whom the aggression was aimed toward, and the potential effects of alcohol on sexual habits. These questions served no useful purpose in increasing the numbers of female problem drinkers; they did provide a more colorful picture of a very few women with obvious alcohol problems.

It should be pointed out that an epidemiology of alcoholism is quite different from an epidemiology of problem drinking. The great majority of alcoholics in clinics are over 30 with a relatively long history of deviant drinking; the great majority of problem drinkers are under 30 and have not had years of serious alcohol use. In fact, as mentioned before, most young problem drinkers eventually age out of their problems.

Bridging the gap between our problem drinkers who do not seek care and those who appear in clinics diagnosed as alcoholic has been attempted by a few studies (Mulford and Wilson; Armor

and Room). The findings reveal that less than 1-3 percent of those in the normal population were roughly similar to the clinical population. Even taking measurement error into account, the overlap between the two groups is slight. If we were only concerned with estimations of alcoholics in the population, then our numbers of deviant cases would dramatically decrease, especially among women.

Therefore, surveys of drinking and problem drinking (although certainly including the severely alcoholic) must focus on behaviors and consequences which may be equally dysfunctional for society and the individual but, quite appropriately, do not fit into clinical definitions of alcoholism.

Getting down to the question of defining alcohol use and problems in survey research, I would agree with Dr. Wechsler that a great deal more work must be done on the dependent variables, not only by including items which are more relevant to the lives of women, but also by taking a renewed long hard look at the interaction between the actor, the act, and the audience.

Let me give a few examples. Could it be that our actor or actress is labeled by the researchers a deviant drinker by displaying a variety of deviant behaviors of which only some are associated with alcohol? If our actor or actress was involved in 10 fights in the last year, but was drinking prior to only three of these fights, we might tentatively suggest that the role of alcohol has been given too much negative significance. Indeed the audience may be responding not to the drinking but to the behavior sometimes associated with the drinking.

Let's look at the audience in relation to the act. When we ask for instance, "Did members of the family complain, get angry, threaten to leave, or leave as a result of your drinking?" we are getting an audience response to a big subject called drinking. We know virtually nothing about the behavior or behaviors that evoked the response—only that our actor or actress had at least one drink of alcohol. What happened? Did a husband complain because his wife got drunk and beat the kids, made a pass at his best friend, or was a bit too much the life of the party? What value did the lady offend? We don't even know how much alcohol was consumed.

And now for our poor maligned actor or actress. Could it be that some people find themselves in a position where the potential for being labeled deviant is quite high? It's entirely possible that the wife who complains about her husband's smoking, placing his feet on the coffee table, snoring, and treating the children badly may also complain about his drinking, which may well be indepen-

dent of all his other frightful characteristics. We might suggest that because he occupies low status in the marital dyad, any behavior has a higher potential for being labeled deviant.

Lastly, as Room puts it, "It is illegitimate to assume that these (reported) behaviors actually indicate perceived problems for the respondent: fighting while drunk or drinking on the job may be acceptable and expected in his milieu, and skipping meals while drinking or experiencing hangovers and self-medicating them with alcohol may not have further health consequences" (Room 1977).

I give you these examples for two reasons. First, there is considerable room for improvement in finding out more about the kinds of problems women experience with drinking; and second, a disaggregation and closer examination of a wide variety of problems might help solve some of the difficulties of every research alcohol surveyor. Elimination of false positives would be a help. Also a major disability in this research is trying to find the fit between alcohol problem areas (including not only negative consequences, but also attitudes toward drinking and medical symptoms).

Alcohol problems are not hand-delivered to the researcher in a silver package tied up with a red bow. As a matter of fact, they don't fit or mesh well at all. As we well know, the DWI does not necessarily get into trouble with his or her spouse regarding drinking, and the eagle-eyed clinician may not find one so-called alcoholism symptom in him or her. My recommendation for future research in this area is to get our dependent variables straight. If they are poorly defined, then we are in no position to address an epidemiology of alcohol use or problems.

I address this enormous problem from another vantage point, while simultaneously plugging some of my pet assumptions and our own research. If young people are overrepresented as experiencing alcohol problems, and if most of them do not develop into alcoholics, and if the existing scales we use to describe alcohol problems mesh, although poorly, in different ways by age and sex, then I think we can comfortably assume that deviance and conformity vary in time and space—an old sociological assumption. As alcohol researchers, we typically take a given scale, let's say psychological dependence, which may or may not have been empirically derived from a sample of respondents. Then we look at psychological dependence across age, sex, or ethnicity, for instance, and we can make statements that certain groups exhibit high or low proportions of psychological dependence. But what if the items composing this scale relate to each other differently as well as to items composing other scales which we manufacture as

a function of space and time? Could we get different profiles of normative and deviant drinking, based on age and sex, letting items based on 40 years of theoretical and operational development empirically fall where they may?

In a 25-year longitudinal study of college students, measured in youth and middle age, we cluster analyzed (third-order correlations) problem drinking items independently by sex and age. We found very different, but theoretically congruent, profiles of deviant and conformist drinking by sex and age. We found that by taking the analysis one abstract step further, there was a better mesh or fit among problem areas. We found that we could double the explained variance in adult drinking problems from youthful drinking behaviors and attitudes by using scales which were specifically developed by sex and age as opposed to scales developed across sex and age, namely the Cahalan and Room scales. We also found very interesting differences between men and women when we tried to predict serious adult drinking problems from youthful drinking practices. Among men, we found that the spread of alcohol involvement (at least a dabbling in spree-solitary drinking and in what we call feeling adjustment, a form of psychological dependence, and the almost demanding expectation that alcohol play a major role in social life and intoxication and negative consequences) best predicted alcohol problems occurring 25 years later. But among women, it was early motivations and attitudes, not drinking behaviors, which best predicted later alcohol problems—women whose drinking was aimed toward getting high as well as aiding them toward a sense of gaiety, getting along better with the opposite sex and decreasing shyness. Their attitudes toward social gatherings were colored with the expectations, and in some cases the absolute requirement, that drinking play a major role. They would not stand out as young people with alcohol problems, but over half of them would experience moderate to severe alcohol problems in middle age, and one-third of them would experience severe alcohol problems in middle age.

All of these examples help to show that the major effort in this field should be to explore indepth what we mean when we say alcohol problems. We need to get under the skin of our most complex dependent variables, to take them apart and put them back together again, and to continually replicate each other, pitting one conglomerate against the other to best fit our theoretical foot.

In summary, I can state that we require more complete study of the spectrum of drinking; that to a degree we have possibly stereotyped types of drinking influenced predominantly by one sex; that studies of trends should be carefully considered within the con-

tingencies of historical, cohort, and aging effects; and that drinking and drinkers should be more carefully examined in the context of social roles, expectations, and normative subcultural behaviors.

We have hundreds of hypotheses waiting to be tested; however, until drinking behaviors, attitudes, and effects of both are more clearly specified, such analyses seem somewhat inadequate. If we carefully explore our assumptions and biases regarding drinking and drinkers, we may cut down on the horror stories on the one hand and avoid denial of problems on the other. By this kind of exploration, we may more definitely ascertain the kinds of trouble women get into as a result of drinking. As a side effect, we may learn a bit more about the gentlemen too.

Dr. Curlee-Salisbury led a participant discussion of the issues raised by Dr. Wechsler and Dr. Fillmore. Significant issues are summarized:

Measurement problems in epidemiological studies—Measurement of the amount and frequency of drinking, using self-reports, is very difficult. Asking people to categorize their own drinking is also a problem, because people do not like to put themselves into the "high" category, thus labeling themselves as having a problem, or to report drinking-related behaviors which are identified as "adverse consequences." Response categories which are not value-laden or negatively labeled are needed. Measurement is also complicated because many people, women and men, do not really know or do not remember how much or how often they drink; this is especially true of youth.

Another measurement-related problem is the categorization of individuals based on the amount they drink per occasion. Generally, such categories are not sex-specific, even though we know that women tend to drink less per occasion than men. The physiological differences between men and women are significant; a weight-adjusted cutoff for problem drinking is needed, or a separate cutoff for women and men. It may not be feasible to use individual weight as a basis for categorization, however, since women often will not tell an interviewer their body weight, or will underestimate it, according to one researcher who has attempted to obtain such information.

Difficulty of obtaining representative samples—Many epidemiological studies have focused on clinical or deviant populations, as Dr. Fillmore suggested. Such studies are useful in describing the nature of drinking problems among this special population, but less helpful in understanding either drinking or problem drinking among the general population. Even more general surveys often have not been representative of the entire population; for

example, Straus and Bacon oversampled Mormons. Surveys are needed of the "normal" population and the general population. In addition, comparisons should be made not just between men and women, but between women with alcohol problems and women with other mental health or emotional problems, and between women with alcohol problems and women in the general population.

There was some disagreement over the frequency with which female alcoholics are hospitalized. One participant felt that women are less often hospitalized, especially if they have young children; another indicated that while this may be true of some facilities, women seem to use public health facilities more than men. A third participant reported data showing male alcoholics with half again as many admissions, but women staying in a facility much longer on the average. Since the relationship between alcoholism and hospitalization is not known, studies of hospital populations may or may not adequately reflect actual alcoholism rates within the general population.

Relationship between drinking rates and alcohol abuse or alcoholism rates—As Dr. Fillmore indicated, the epidemiology of drinking may be very different from the epidemiology of problem drinking. In reviewing trends showing that more women drink, it is not safe to assume that more women must therefore be having alcohol-related problems. Changing women's roles could lead to more drinking, and more drinking could lead to more problem drinking, or changing roles might mean less conflict about drinking, and therefore less trouble.

Alcohol and drug use—Several recent epidemiological studies have found a correlation between alcohol abuse and the abuse of other drugs. The Jessors, for example, report a "convergence" among the high school populations they have studied. Dr. Wechsler found that heavy users of one tend to be heavy users of both. However, the nature and pattern of the relationship between alcohol and other drug abuse are not well understood.

Aging out of early problem drinking—Findings indicating that most young problem drinkers "age out" of this behavior and do not become problem-drinking adults have been discussed. A major research need is to be able to predict future problems, to identify those youth or young adults who are likely to become alcoholics by middle age without appropriate intervention. What are the predictors? Several were suggested. Dr. Fillmore reported that the 25-year longitudinal study found no relationship between fear of drinking problems in youth and later problems, but found a high positive correlation between fear of drinking problems in middle-

aged adults and later very serious drinking problems. It was suggested that socially mobile college students seem to age out of problem drinking, while downwardly mobile students and those who do not graduate do not seem to mature out. Many boys who are high on overt problems seem to age out, perhaps because they "learned by doing." Dr. Fillmore indicated the importance of early motivations and attitudes, rather than drinking behavior, as predictors for young women. The frequency of aging out may reflect the decreasing importance of the peer group in college and later life; youth who drink heavily to "fit in" during high school may no longer need to conform to peer group norms once they have left this environment.

Are women "sicker?"—Several participants took issue with a statement that "women with drinking problems are 'sicker' than their male counterparts." The term "sicker" was considered by some participants to be a value judgment. However, it was widely agreed that women alcoholics have more mental health pathology symptoms than male alcoholics, while men are more likely to show acting-out behavior. Moreover, female problem drinkers show more mental health problems than nonproblem drinking women, while this is not true of men. Women may be adjudged sicker because female alcoholics are seen as breaking societal (sex role) norms much more than are male alcoholics; it is considered unfeminine to drink heavily, but certainly not unmasculine. The importance of societal views was discussed; perhaps women may *get* sicker because they are *considered* sicker. Deviance among women may be more severely punished; a high rate of alcoholism is found among lesbians—a rate higher than among male homosexuals.

While the discussion of epidemiology focused on the use of surveys to obtain data, it was noted that epidemiological data can also be obtained through other methods. For example, collection and analysis of cirrhosis data, emergency room alcohol-related events, and various other public health data can provide estimates of problem drinking rates and consequences.

Research Issues and Recommendations

Work Session Coordinator: Ruth Cooperstock

1. Conduct a series of simultaneous studies which focus on subgroups of women with alcohol-related problems. These studies should include:

- Large-scale surveys which over-sample various populations who may be at high risk for alcohol problems (blacks, Chicanos, poor women, single women, single parents, etc.);
- Studies including women with alcohol problems, "normal" women, and women with other emotional or behavioral problems in order to determine the range of problems, prevalence and incidence of problems and the relevance of problems that emerge with each other; and
- Longitudinal trend studies of known heavy drinkers and "normal" drinkers which include regular sampling, physical examinations to relate physical consequences of drinking to drinking patterns, and which examine problems and subgroups that are not typically tapped in surveys.

2. Conduct ethnomethodological research on drinking contexts and include studies on the natural history of drinking and alcohol-related problems, especially for subgroups which are already identified as being at high risk for alcohol problems.

3. Tap and closely monitor existing sources for data about women and alcohol-related problems (hospital records, emergency room records, arrest records, accident reports, and overdose records which may relate to alcohol) and correlate demographic data to identify high-risk groups.

4. Train other social agencies (social services programs, welfare programs) to keep records concerning alcohol-related problems to increase the quality of reporting and to provide useful data.

5. Conduct additional studies of physical consequences of alcohol use/abuse as they relate to the increased patterns and quantities of alcohol consumption by women.

6. Research patterns of use and consequences of the combination of licit and illicit drugs and alcohol. This should involve studying levels of use of substances, patterns and history of use, and both biological and psychosocial consequences of use.

7. Research the correlation between blood alcohol level and consequences of alcohol consumption (both medical and behavioral). Develop comparable data on blood alcohol levels and their relation to body weight for men and women and insure the inclusion of these data when gathering and reporting data.

8. Research and develop new and innovative methodological means for improving validity and reliability of self-reported data for women and for various subgroups of women.

9. Examine control concepts other than the usual variables (age, socioeconomic status, etc.) in order to be able to establish true control groups for studies. This would include studies of the variables of coping skills, self-esteem, self-perception of physical attractiveness, self-perception of intelligence, etc.

II. Biological and Psychosocial Consequences of Alcohol for Women

A. Introduction: The Biological Consequences

Shirley Y. Hill, Ph.D.

Any attempts to understand the different biological consequences of drinking or problem drinking in women and men must take into account both the differences in medical consequences resulting from alcohol consumption and differences in medical conditions that may alter the risk for addictive behavior in women who drink. The consequences of alcoholism and alcohol abuse in women undoubtedly affect biological and psychological functions. The first section of this paper will attempt to delineate those consequences which are predominantly biological in nature and those medical consequences that appear to be related to sex. This paper will include among the numerous medical complications a discussion of the differences in mortality rates (including suicide), cognitive dysfunction and brain pathology, affective disorder, psychophysiological changes (including sleep disregulation), and risks for alcoholism in children of female alcoholics.

Review of Research

Comparison of Male and Female Mortality Among Alcoholics. Death rates among alcoholics have been observed to exceed population rates for a number of disorders including cancers of the upper-respiratory and digestive tracts, heart disease, cirrhosis of the liver, accidents and suicide (Sundby 1967; Lipscomb et al. 1959; Nørvik and Neilsen 1956; Kessel and Grossman 1961; Palola et al. 1962).

When the combined rate of death from all alcohol-associated disorders is considered, one finds an excess mortality in women when compared to men (Schmidt and De Lint 1969, 1972). These authors have noted that this excess mortality among alcoholic women may be due in part to lower rates of mortality among women in the general population. When the female mortality rates were recalculated using expectancies for male alcoholics, researchers found no excess in mortality for the female alcoholics.

Schmidt and De Lint noted specific causes of death which included a large number of individuals (5,359 men and 1,119 women). The specific causes which appeared to show the largest excesses were cancer of the upper-digestive and respiratory organs, alcoholism, pneumonia, cirrhosis of the liver, accidents, and suicide. These causes accounted for two-thirds of the difference between the observed and expected number of deaths. Specific comparisons by sex were not tested for statistical significance, though inspection of their data reveals excess deaths for women to be greater than excess deaths for men for a number of causes, including vascular lesions of the central nervous system, arteriosclerotic and degenerative heart disease, pneumonia, ulcers of the stomach and duodenum, cirrhosis of the liver, and accidental death.

Suicide. The association between alcoholism and suicide has been well established, with reported rates of between 6 and 20 times that of the general population (Goodwin 1973*a*). Reports of suicide in association with alcoholism by sex are much less clear. Death by suicide is particularly difficult to assess since in the general population women have a higher rate of attempted suicide (Bratfos 1971), while men have a higher rate of completed suicide (Gibbs 1966). Among alcoholics, women have been reported to show a higher incidence of suicide attempts (Curlee 1970; Rathod and Thompson 1971; Rimmer et al. 1971). Curlee found a rate of 1 percent for men and 11 percent for women among alcoholic inpatients. Rimmer et al. (1971) have noted that 26 percent of male alcoholics report attempted suicide, compared to 44 percent of female alcoholics. Rathod and Thompson (1971) similiarly reported an excess of female attempters, a rate of 2.1 percent for males and 34 percent for females. However, one report based on the official U.S. mortality statistics has noted lower rates of both alcoholism and suicide among women (Rushing 1969). But this investigation did not start with alcoholic samples to determine sex differences in suicide rates, and therefore the sex having the highest rate of alcoholism in the general population may be expected to have more suicides in the general population. Recent data (Adelstein and Graham-White, cited in Ritson 1976) indicate completed suicides (using death certificates) among male alcoholics to be 22 times the rate for males in the general population, and among females 23 times the general population rate. In the alcoholic patients studied by Schmidt and De Lint, excess suicide was similar (frequency of observed/frequency of expected = 6.02 for men and 8.69 for women). Given the lower rates of suicide among women in the general population, these

data suggest a greater excess of completed suicide among female than male alcoholics.

While five followup studies of alcoholics have discussed alcoholism-related completed suicide (Dahlgren 1945; Lemere 1953; Nørvik and Neilsen 1956; Sundby 1967; Kessel and Grossman 1961), only one of these studies provides adequate data for assessing male-female comparisons. In that study Kessel and Grossman (1961) found 13 of 172 male alcoholics but none of 46 female alcoholics who completed suicide.

In conclusion, studies of suicide and alcoholism indicate that women outnumber men in terms of both attempted and completed suicide. Two approaches have been used by investigators studying this relationship. Either suicides are examined retrospectively for evidence of alcoholism, or alcoholic populations are followed for some period of time and the number of attempted or completed suicides is noted. Each of these methods has pitfalls, the former in the assumption that alcoholism in the victim may be presumed in those cases where intoxicating blood alcohol levels are found at autopsy. The followup method suffers from the impracticality of following the alcoholic for more than a few years. Thus, conclusions drawn concerning the relationship between suicide and alcoholism are difficult to assess.

Review of the existing literature indicates that the relationship between attempted and completed suicide and alcoholism is even less clear when one takes into account sex, socioeconomic status, and age. Relatively few studies have been concerned with comparison of female and male alcoholics. Moreover, since a greater number of men than women in the general population complete suicide, it is essential that data be corrected for population prevalences by sex. Further work is clearly needed to determine the risk for suicide among alcoholic women.

Related to the question of suicide risk is the question of sex differences in self-injury as they relate to alcoholism. Jarvis et al. (1976) have recently reported a significantly higher rate of self-injury among females when compared to males in a sample of Canadians. The definition used by these authors was "self-inflicted overdosage, asphyxiation or injury whether or not there was evidence of suicidal intent." The study of sex differences in self-injury among alcoholics could have broad implications for the alcoholic in his or her family or workplace.

Sex Differences in Alcohol-Related Liver Disorders: Incidence and Outcome. An increasing incidence of alcohol-related liver disorders and associated mortality has been well documented in a number of studies in the United States (Kramer et al. 1968; Kuller

316-863 O - 80 - 5

et al. 1969), in Great Britain (Krasner 1977), and in Sweden (Hallen and Krook 1963; Hallen and Linne 1970). Epidemiological surveys from all over the world indicate a direct relationship between the per capita consumption of alcohol in particular populations and the number of deaths from cirrhosis (Williams and Davis 1976; Lelbach 1974). Other variables which have been explored include the nutritional status, socioeconomic class, and sex of cirrhotic patients who have a history of alcoholism.

Spain (1945) first noted that among a sample of patients suffering from portal cirrhosis associated with heavy drinking, a larger proportion of women than men were affected. It was also noted that women patients died, on the average, at an earlier age, 48.6 years, versus 56.3 years for men. Since that time, a number of studies have pointed to sex differences in the prevalence of hepatitis and cirrhosis of the liver. These studies have been based on large-scale autopsy studies (Hallen and Krook 1963; Viel et al. 1968), analysis of death certificates confirmed by a medical examiner (Kramer 1968; Kuller 1968, 1969), followup studies of patients who received liver biopsies (Krasner 1977; Lischner 1971; Mikkelsen et al. 1968), or both autopsy and biopsy analyses (Wilkinson et al. 1969; Phillips and Davidson 1954).

Starting with samples of cirrhotic alcoholic patients, it would appear that a larger number of men than women are affected, in a ratio of approximately 1.6:1 (Hallen and Krook 1963; Hallen and Linne 1970) or 2.7:1 (Krasner 1977). However, since more men than women are alcoholic in any given population, these data deserve further attention to determine the actual risk within female alcoholic and male alcoholic populations.

For example, Wilkinson et al. (1969), studying a population of 800 alcoholics in Melbourne, Australia (663 men and 137 women), found 77 cases of alcoholic cirrhosis. In that study, 16 percent of the population were women while 8 percent were men. Further, these authors noted that the women with cirrhosis had drunk excessively for a significantly shorter period of time than the male cirrhotic patients (13 years versus 20 years). Similarly, Viel et al. (1968), studying 1,079 male and 269 female Chilean alcoholics, found twice the rate of cirrhosis among women over 35 years of age (29.4 percent) as in their male counterparts (11.3 percent). Starting with an alcoholic sample, Lischner et al. (1971) noted hepatitis associated with drinking in approximately a 2:1 ratio of females to males (64 percent of female alcoholics and 36 percent of male alcoholics). Recent data (Krasner et al. 1977) from London, in which 293 cases of alcoholic liver disease were examined by liver biopsy, showed significantly more females than

males with central sclerosing hyaline necrosis (11.5 percent versus 3.3 percent). Morgan and Sherlock (1977) also recently reported that the incidence of chronic advanced liver disease was higher among English women (86 percent) than men (65 percent).

Survey of the literature also indicates that women alcoholics with acute liver disorders have a higher mortality risk than male alcoholics. Mikkelsen et al. (1968), studying 46 patients with acute hyaline necrosis, found that among 20 patients with surgical intervention (portacaval shunt), 9 of 11 females died and 6 of 9 male patients survived. In an early investigation (Phillips and Davidson 1954) in which 56 patients with acute hepatic insufficiency were studied, of the 18 patients who died, 11 were female. However, one study (Hardison and Lee 1966) of patients with a hospital admission diagnosis of acute liver disease found similar mortality rates for men and women, 34 percent and 32 percent, respectively.

These data are particularly noteworthy in view of the reported trends in incidence of cirrhosis mortality over the past 20 years, which indicate that the increase is most pronounced for women and blacks. Kramer et al. (1968), analyzing death certificates for the periods 1957-1958 and 1965-1966, showed a 260 percent increase in cirrhosis mortality in black women for the latter compared to the former period.

A number of theories have been advanced to explain the observed sex differences in liver pathology, including differences in pattern of drinking, adverse effects of estrogen on liver functioning, and possible immunological differences of the autoimmune type.

It has been noted that women more often tend to be steady drinkers and are less likely to engage in binge drinking, and that steady drinking may be more destructive from the standpoint of liver pathology (Wilkinson 1969). This is apparently true in spite of the fact that women appear to develop cirrhosis at a lower level of alcohol intake (Krasner et al. 1977; Pequinot et al. 1974) and following a shorter duration of excessive drinking (Wilkinson et al. 1969; Lelbach 1974; Galambos 1972).

The role of estrogen in liver function has been discussed in a review by Galambos (1972). In that review it was noted that estrogen can impair liver function in the absence of liver disease and may worsen liver function when active progressive liver disease is present. The role of estrogen in increased mortality of female alcoholics with liver injury appears to be a strong possibility.

Further study on the immunological differences in female and

male alcoholic cirrhosis appears necessary. Serum auto-antibodies have been found to be particularly high in women, particularly in those with alcoholic hepatitis and cirrhosis (Krasner et al. 1977). Further, Sherlock (1975) found that severe alcoholic hepatitis was seen in women under 45 years of age, a group that is principally affected by the autoimmune liver disease, chronic active hepatitis. Williams and Davis (1976) have commented on the possible relationship between premenopausal autoimmunity in liver disorders and other inflammatory autoimmunizations that subside following menopause.

In summary, the female alcoholic appears to run a greater risk for developing liver disease at an earlier age, following a shorter duration of heavy drinking, and presumably in association with a lower level of consumption than males. Once the liver has sustained injury, women appear to have the added risk of increased mortality over that of their male counterparts.

Alcohol Intoxication, Metabolism, and the Menstrual Cycle. The relative rates of ethanol metabolism among various populations have been the focus of attention in studies comparing alcoholics with nonalcoholics (Mendelson 1972), adopted children of alcoholics and nonalcoholics (Utne et al. 1977), and twins (Vesell et al. 1971; Kopun and Propping 1977) in an attempt to find genetic differences that might explain the relative differences in propensity to consume large quantities of alcohol as observed in some individuals.

Comparisons between alcoholics and nonalcoholics or their adopted offspring have failed to show significant differences in metabolism (Mendleson 1972; Utne et al. 1977), while twin studies have provided conflicting results. One study (Vesell et al. 1971) reported greater similarity in ethanol metabolism between monozygotic twins than dizygotic twins. The authors interpreted this to indicate almost total genetic determination of ethanol metabolism. In another study (Kopun and Propping 1977), researchers noted genetic influences on ethanol metabolism in identical twins, though variations between fraternal twins appeared fairly large and probably due to a number of environmental factors such as smoking.

The usual method for determining the rate of ethanol metabolism involves calculating the disappearance rate of ethanol (percent per hour) from the blood starting with the peak blood alcohol level or, alternatively, calculating the total time required to reach zero blood alcohol starting from the beginning of the drinking period. From these determinations, the elimination rate, milligrams of alcohol per kilogram body weight per hour, can be calculated.

Only recently have sex differences in the metabolism of alcohol been systematically explored (Jones 1976; Jones and Jones 1976). In a series of studies, these investigators administered alcohol to groups of nonalcoholic men and women. They found women to have a faster blood alcohol disappearance rate than men (Jones and Jones 1976), although the difference was not statistically significant.

Differences in ethanol metabolism were not found in relation to the menstrual cycle in women generally. However, when women taking oral contraceptives, agents which contain synthetic estrogen, were compared with women not taking oral contraceptives, statistically significant differences in metabolism were noted at each of the phases of the menstrual cycle: premenstrual, menstrual, and postmenstrual. Women taking oral contraceptives took longer to reach zero blood alcohol level and displayed a significantly slower rate of elimination. In addition, the calculated disappearance rate taken from the peak blood level was slower for women taking oral contraceptives.

Each group of women was also compared to a group of men. Both groups of women reached higher peak blood alcohol levels than the men. However, the women not taking oral contraceptives had a significantly faster ethanol disappearance rate. The women taking oral contraceptives also did not differ from the men in time to reach zero blood alcohol level or in their rates of ethanol elimination, unlike the women not taking oral contraceptives.

These data indicate that, when given the same dose of ethanol, women become more intoxicated (higher peak ethanol levels) than men. Women who take oral contraceptives do not show a different rate of elimination, or time to reach zero blood alcohol, than men, so that although women reach a greater level of intoxication than men, they do not remain intoxicated longer. However, women taking oral contraceptives reach higher peak levels than men and remain intoxicated longer.

Jones and Jones (1976), discussing the implications of these findings, have noted that higher monoamine oxidase (MAO) activity during the postovulatory than the preovulatory phase has been reported (Klaiber et al. 1971). In that report, MAO activity was also noted to be reduced following estrogen administration, further suggesting that the menstrual-induced changes in MAO activity are due to changes in estrogen levels. This finding, taken together with the observation that women sometimes increase their drinking premenstrually (Dalton 1964), has led Jones and Jones to speculate that alcohol may act as an MAO inhibitor, thereby reducing depressive symptoms.

Depression and Alcoholism: Correlate, Consequence or Antece-

dent? Many alcoholics in treatment report symptoms of depression. In a study of 1,000 alcoholics, Tyndel (1974) found serious depressive symptoms either currently or in the past history of 35 percent of these alcoholics. As Weissman and Klerman (1977) have noted, epidemiological surveys of depression indicate a preponderance of women, while alcoholism appears to affect more men than women. It has been suggested that alcoholism and depression are the same disorder exhibiting different manifestations in men and women (Winokur and Clayton 1968).

While an association between manic-depressive disease and alcoholism has been noted clinically for years, the question of cause, consequence, or simple correlation remains undetermined. While many patients report early onset of depression which is only later complicated by alcohol abuse, still others show long-standing alcoholism which only much later shows evidence of depression. Alcoholism with secondary depression may be the result of the toxic reaction to alcohol abuse or to the psychosocial consequences of being alcoholic for some time. Studies designed to test this association have produced conflicting results. At least five studies have shown excessive drinking in persons diagnosed as having affective disorder (Cassidy et al. 1957; Mayfield and Coleman 1968; Winokur et al. 1969; Woodruff et al. 1973; Reich et al. 1974). On the other hand, Morrison (1975) reports that the percentage of manic-depressive patients admitted to an acute care psychiatric service who were diagnosed as alcoholic was not significantly different from the rate of alcoholism for the entire psychiatric service.

A genetic model for a presumed clustering of these two diseases has been proposed, based on a number of studies that have demonstrated an excess of alcoholism in the relatives of manic-depressive patients (Winokur et al. 1969) and an increase in affective disorder in the families of alcoholics (Winokur et al. 1970). These findings have been challenged by two reports (Morrison 1975; James and Chapman 1975). In the Morrison study, two proband groups were contrasted, one having bipolar affective disorder with alcoholism and one having bipolar affective disorder without alcoholism. Affective disorder was seen with equal frequency in the relatives of both groups. Similarly, James and Chapman (1975) found that among a group of 46 bipolar probands, affective disorder was found in 19.6 percent of the first degree relatives, while only 5 percent of the male and 1.5 percent of the female relatives were alcoholics. The incidence of alcoholism among first degree relatives of probands having affective disorder was, therefore, no greater than the population prevalence.

Clearly, more work is needed to diagnostically separate alcoholism with secondary depression from depression or affective disorder with secondary alcohol abuse. The treatment method and outcome may be quite different for these two groups. In addition, more work is needed to determine sex differences in the natural history of these two disorders.

Alcoholism and Other Drug Abuse Among Women. Studies designed to determine the incidence of other drug abuse in female alcoholics are quite limited. Sclare (1970) reported no difference in drug dependency among 50 male and female alcoholics in Scotland. However, drug dependency was relatively uncommon in this group of alcoholics; only eight cases, mostly of the barbiturate type, were observed in all. Rathod and Thompson (1971), studying 95 male and 32 female alcoholics, found eight women and six men dependent on amphetamines or barbiturates at some stage in their history.

Patterns and incidence of drug abuse among alcoholics have generally been a neglected area and, therefore, existing data are particularly uninformative regarding the female alcoholic. Existing literature has been predominantly concerned with alcohol abuse among heroin addicts (Green and Jaffe 1977). Alcohol abuse has been observed in methadone maintenance and detoxification programs in the United States and Great Britain (Mitcheson et al. 1971). In one study of 789 heroin addicts applying to the Bernstein Institute Methadone-Maintenance Treatment Program in New York City, 14 percent of the addicts were reported to have drinking problems (Richman et al. 1973). Data by sex were not available to determine the incidence of both alcohol and heroin abuse in women.

Study of the joint incidence of alcoholism and heroin abuse has implications both for medical problems and the etiology of these two disorders. Green and Jaffe (1977) in their review of the literature note that evidence of more severe liver disease, intensification of electrocardiogram abnormalities and mortality have been reported in individuals abusing both alcohol and heroin. Regarding etiology, Green and Jaffe (1977) have proposed that there may be subsets of narcotic addicts, some of whom have family histories of depression, sociopathy, and alcoholism in first degree relatives while other subgroups do not. They further propose that narcotic addicts with such a family history will be more likely to drink excessively and will have more difficulty achieving abstinence from drugs.

The association between drug abuse, alcoholism, and affective disorder has not been systematically studied, though Himmelhoch

et al. (1976) have recently shown that both alcohol and other drug abuse are significantly associated with mixed-state affective disorder and that the treatment response is adversely affected by drug abuse in patients diagnosed as having affective disorder.

The greater attention that has been given to alcoholism as it relates to affective disorder may be due to the social acceptance and greater availability of alcohol, and, therefore, a greater incidence of alcoholism than other drugs of abuse among patients seen for primary affective disorder. If one takes as the starting point a proband group of opiate addicts and other substance abusers, incidence of affective disorder in these probands and their first degree relatives is unknown. Breakdowns of psychiatric disorders in heroin addicts in other studies have employed diagnostic terminology that would not allow estimating the incidence of affective disorder (Smith et al. 1966; Willis 1969). However, Ellinwood et al. (1966) reported that 20 percent of male heroin addicts showed "emotional" problems including depression. Moreover, about 8 percent of male addicts in the Willis study were shown to have received either ECT or antidepressant therapy at some time in their lives.

The etiology of alcoholism and opiate abuse, whether a single disorder with different manifestations or two distinct disorders, has rarely been investigated. In only two studies has a direct comparison been made between siblings and parents of chronic alcoholics and siblings and parents of opiate addicts with respect to the rate of alcoholism and opiate addiction in those relatives (Pohlisch 1933; Hill et al. 1977).

Pohlisch found alcoholism in 22 percent of the brothers of alcoholics but in only 6 percent of the brothers of opiate addicts. Alcoholism occurred in 47 percent of the fathers of alcoholics and 6 percent of the fathers of opiate addicts. Results of this study suggest that the transmission of alcoholism and opiate addiction is at least partly independent; what is being transmitted is not simply an addiction-proneness.

Hill et al. found alcoholism in 32 percent of the brothers of alcoholics, but in only 6 percent of the brothers of opiate addicts. Similarly, alcoholism was found in the fathers of alcoholics in 42 percent of the cases, while alcoholism among fathers of opiate addicts occurred 15 percent of the time. In this study, population prevalence data were available for alcoholism and opiate abuse in the region from which the cases were selected (St. Louis, Missouri) allowing for determination of the tetrachoric correlation between the disorder in the proband and the disorder in the relative. Significant correlations were found for alcoholism in male

siblings of male proband alcoholics ($r = .37 \pm .11$, $p < .05$) and for opiate abuse in male siblings of male proband opiate abusers ($r = .20 \pm .08$, $p < .05$). The cross correlations (alcoholism in siblings of opiate addicts or opiate addiction in siblings of alcoholics) were not significant.

As noted previously, epidemiological studies of depression indicate that women preponderate, while males appear to be overrepresentated in alcoholism and heroin abuse. Taking our sample of male heroin abusers and alcoholics, we decided to look at the pattern of drug abuse in female relatives of these men. Preliminary analysis of our data indicate that the number of female alcoholics related to alcohol abusers was significantly higher than the number of female alcoholics related to narcotic abusers. These data suggest that alcoholism and heroin abuse in women show independent familial transmission similar to that observed for men. The nature of these data do not follow for determining whether the transmission is genetic or environmental or both. Further observations also suggest that drug abuse other than alcoholism in the female alcoholic may be in part determined by that individual's family history for opiate abuse.

It should be noted that our study was limited to male alcoholics and heroin abusers, noting incidence of these disorders in male and female relatives. Further work is needed starting with female probands to determine the generality of this finding. In addition, attention should be paid to the family history for sociopathy and depression in these individuals as possible predictors of treatment outcome.

Genetic Consequences of Alcoholism. It is well known that alcoholism tends to run in families (Goodwin 1971). Consideration of genetic factors in alcoholism usually addresses questions of etiology, vulnerability, or risk. Since other portions of this symposium will be concerned with these topics, we have chosen to look only at the genetic consequences for the offspring of the female alcoholic.

The specific areas of consideration are: (1) evidence that alcohol causes chromosomal aberrations, (2) evidence that environmental factors such as living with an alcoholic parent may alter the phenotypic expression of any genetic component that an offspring of an alcoholic may possess, and (3) evidence that through assortative mating, alcohol abusers may tend to marry other alcoholics, thereby increasing the genetic risk for offspring.

One study has reported evidence of chromosomal aberrations in male alcoholics (de Torok 1972), noting this is a potentially important source of genetic abnormality that has been largely

neglected in the wake of increased concern over the effects of maternal drinking on the offspring. Findings of this type are certainly worthy of replication and extension to include female alcoholics.

Research efforts designed to test the genetic hypothesis with the environmental factor largely removed have included studies of adopted offspring of alcoholics and studies of twins. Comparing the male offspring of alcoholic biological parents to those of nonalcoholic biological parents, Goodwin and colleagues (1973) have noted five times as high a rate of alcoholism in children of alcoholics raised with foster parents. Comparison of the female offspring of alcoholic biological parents with adopted female children of nonalcoholics revealed no significant differences in rates of alcoholism in these children (Goodwin et al. 1977). These data suggest that a genetic component may be a necessary condition for alcoholism. It may be, and research must be done in this area, that the genetic component may require some sort of "environmental triggering" to be manifested. Reich et al. (1975) have proposed that separate thresholds exist for alcoholism in men and women. These thresholds are related to differences in nonfamilial factors between men and women and *not* familial ones.*

While studies of half siblings of alcoholic parents, some living with the alcoholic parent and some not, have reported no differences in outcome (Schuckit et al. 1972), it should be noted that all possible arrangements of genetic risk and environmental risk were not studied because of small sample size. Perhaps for female offspring with a genetic risk, the consequence of living with a female alcoholic (mother, sister, aunt) may be different from if the same offspring lives with a male alcoholic, either father or brother.

---

*Recently this group of investigators (Cloninger et al., in press) have applied the multifactorial model of disease transmission to data available for 365 relatives of white alcoholics to determine the mode of familial transmission. Three hypotheses about etiology of sex differences were tested: the *Isocorrelational Model*, the *Environmental Model* and the *Independent Model*. Briefly, the *Isocorrelational Model* predicts that correlation between male probands and male relatives will equal the correlation between female probands and female relatives. The *Environmental Model* assumes that differences in the prevalence of alcoholism by sex are due entirely to nonfamilial environmental factors. This environmental hypothesis predicts that differences observed are due to a greater proportion of one sex being exposed to risk, more stressed, or more protected than the other sex. The *Independent Model* presumes that the familial factors relevant to the etiology in one sex are only partly correlated with familial factors in the other sex.

Analysis of their data revealed that female probands did not have a higher proportion of affected male or female relatives than the male probands, allowing rejection of the *Isocorrelational Model*. However, the *Environmental Model* fits the data very well. The male and female alcoholics differ with respect to nonfamilial environmental factors but not familial ones.

The question of assortative mating among alcoholics is an important issue because of the presumably increased risk for offspring of families in which both parents are alcoholics. Studies of husbands of women alcoholics are so rare that incidence of alcoholism in the males that women alcoholics tend to marry is still a matter of conjecture. Further study of children of alcoholics in which both parents are alcoholics might be more informative with regard to genetic questions, particularly if some of these children were raised away from the nuclear family.

Psychophysiological Correlates of Alcoholism in Women. Psychophysiological changes in alcoholics in response to alcohol consumption have been noted in a number of studies (Docter and Perkins 1961; Docter et al. 1966; McConnell and Beach 1968; Naitoh 1972; Wenger 1948; Kissin et al. 1959; Chotlos and Goldstein 1967; Chandler et al. 1975; Schnall and Wiener 1958; Rosenberg and Buttsworth 1969; Smith and Layden 1972; Lovallo et al. 1973). In none of these studies were women included, so we can only hypothesize that the changes noted might be similar in women.

Results of these studies suggest that when tonic levels of heart rate or skin conductance are considered, alcoholics do not differ from nonalcoholics, though phasic changes in response to the demand characteristic of particular tasks have been reported. Other measures of psychophysiological changes following alcohol consumption have been considered, such as forearm blood flow (Rosenberg and Buttsworth 1969), and plethysmograph rebound to cold pressor test (Lovallo et al. 1973), though available data using these tests are limited, making conclusions tentative. Heart rate and skin conductance have been investigated more often, though as Jones et al. (1976*b*) have pointed out in their excellent review, the results of these studies are inconclusive.

We would agree with Jones and colleagues that the best documented psychophysiological correlate of chronic alcoholism is extreme disruption of the normal sleep cycle. Acute alcohol administration has been shown to change sleep regulation in normal individuals as well as alcoholics, though the type of disruption seen in the alcoholics is quite different. Moreover, sleep disruption appears to endure in the alcoholic after periods of abstinence sufficiently long to rule out withdrawal effects.

Alcohol administration in normal subjects has been shown to produce a reduction in Rapid Eye Movement (REM) sleep (Gresham et al. 1963; Yules et al. 1966; Rundell et al. 1972). Conclusions that may be drawn from human studies involving alcohol administration to nonalcoholic individuals are somewhat

limited by the lack of dose-response data and the small number of subjects used. In the four studies mentioned, the dose of alcohol administered was 0.9-1.0 g/kg. Due to the lack of tolerance that normal subjects exhibit, it is rarely possible to administer higher doses of ethanol in the range that alcoholics normally consume.

In spite of these shortcomings, results of these studies indicate that alcohol consistently reduces REM on drug nights in normal subjects and appears to be directly related to blood alcohol level. Two studies have found that alcohol administered immediately before bedtime reduces REM during the first half of the night (Yules et al. 1966; Rundell et al. 1972).

Studies of sleep in alcoholics have been concerned with sleep parameters of alcoholic subjects both during the drinking phase, during early withdrawal (delirium tremens), or after varying lengths of abstinence.

Greenberg and Pearlman (1967) completed an extensive investigation of three alcoholics who drank up to 990 cc of 43 percent ethanol for 4 to 10 drug nights and subsequently were studied for up to 5 withdrawal nights. Alcohol decreased REM initially, followed by REM increases even before withdrawal occurred. Sleep was then sampled for 23 nights after ethanol administration. Upon withdrawal, REM increased above baseline levels, returning to normal levels after 7 to 10 days. However, without statistical analysis or necessary control measures, results of this study must be considered as only preliminary.

Johnson and colleagues (1970) have also reported an alcohol withdrawal in 14 alcoholics who were given 2 days of alcohol administration (110 mg percent blood alcohol level). During alcohol intake, REM was decreased and delta sleep was almost totally absent. After 3 days of withdrawal REM returned to normal. Frequent awakenings and stage changes were noted throughout the study.

In another study involving controlled administration of ethanol, Allen et al. (1971) found decreased REM, decreased waking time, and an increased number of awakenings during 2 to 4 nights of continuous alcohol administration (30 mg of 95 percent ethanol every 2 hours). During 6 to 8 withdrawal nights, increased wakefulness, decreased delta sleep, and longer sleep latency were observed.

Two other studies have investigated sleep in alcoholics withdrawing from alcohol, though controlled ethanol administration was not employed; the alcoholics studied were included in the study at the time of admission to a hospital. Gross et al. (1966) and Bedoret et al. (1972) have reported greatly increased REM with very little delta sleep during acute withdrawal.

Sleep in alcoholics who have remained abstinent for periods up to 2 years have indicated persistent alteration in sleep parameters. Using age-matched control subjects, Lester et al. (1973) found that among 17 alcoholic men who had been abstinent for 3 weeks, more arousals and more stage shifts in the last half of the night were manifested. Mean duration of REM was decreased and the number of episodes increased. Adamson and Burdick (1973), employing 10 alcoholics who had been abstinent for at least 1 year, found that when these were compared with alcoholics who had been abstinent only 10 days, the alcoholics who remained sober for a year or more showed improved sleep (fewer awakenings, shorter sleep latency, greater total sleep), though slow wave sleep was equally depressed.

The intriguing possibility exists that alcohol intake may temporarily restore particular sleep parameters and provide the "motivation" to return to drinking. One study (Gross et al. 1973) gives support to this notion. In that study, alcoholics who were given intoxicating doses of alcohol (3.5 g/kg/day) for 4 to 6 days exhibited slow wave increases on initial nights, though like alcoholics in the other studies cited, very little slow wave sleep was present when they were not intoxicated.

In summary, the effects of alcohol administration upon sleep parameters in nonalcoholics can be distinguished from that seen in alcoholics. While alcohol administration generally appears to suppress REM in both alcoholics and nonalcoholics, alcoholics show increased wakefulness and more stage changes during drinking. Further, chronic alcohol intake appears to be associated with a long-term decline in slow wave sleep.

Further work on sleep disregulation is urgently needed in women, as none of the studies cited have considered possible differences in female alcoholics. Since liver pathology is manifest in women following shorter periods of excessive drinking and at presumably lower levels of intake, as previously noted, it is likely that central nervous system (CNS) functioning may be altered in women following a lesser history of alcohol intake. Sleep disregulation in the chronic alcoholic may be one expression of the brain damage incurred. Further study is needed to determine the reversibility of sleep disregulation in "dried out" alcoholics, controlling for history of abuse and other medical complications, such as liver disorder; and comparing female alcoholics to male alcoholics.

Neuropsychological and Neuroanatomical Evidence of Brain Damage in Alcoholics. The relationship between abuse of psychoactive drugs and brain damage has been widely debated as substance abuse continues to be a persistent social and medical problem. Brain damage has been assessed using a variety of

psychological tests in a number of studies (Kleinknecht and Goldstein 1972; Smith et al. 1973; Goodwin and Hill 1975; Tarter 1975), and occasionally using pneumoencephalography (Haug 1968; Brewer and Perrett 1971), electroencephalography (Johnson et al. 1970; Allen et al. 1971), or more recently, computerized transaxial tomography (Fox et al. 1976; Co et al. 1977; Epstein et al. 1977).

Unfortunately, few studies have used the controls necessary to conclude that an association exists. Most studies involving psychological tests have ignored demographic variables which can alter the proportion of individuals diagnosed as impaired (West et al. 1977). Also, the focus of previous studies concerned with the effects of opiate abuse has been restricted to "polydrug" abusers because of the great difficulty encountered in attempting to find individuals who have abused only the opiates. Polydrug abuse may also complicate the study of alcoholism and its association with cerebral impairment. Only by eliminating polydrug abusers from studies of this type can the relative risk associated with chronic abuse of particular drugs be determined.

Further, in those studies in which sophisticated assessments of structural changes have been made, using computerized transaxial tomography (CTT), subject selection has been based on persistent abnormal functioning, neurological signs, or other indicators warranting CTT scans (Fox et al. 1976; Epstein et al. 1977). Clearly, data have not previously been available to determine the rate of cerebral atrophy in a randomly selected population of substance abusers.

We conducted a study (Hill and Mikhael, in press) to determine whether male alcoholics and opiate abusers exhibit comparable neuropsychological impairment as assessed by the Halstead-Reitan Battery of Neuropsychological Tests and whether structural alterations are manifest using CTT scans. Neuropsychological impairment in 23 alcoholics and 71 opiate abusers was compared. The two groups were closely matched for demographic variables including age, education, and IQ. Selected tests from the Reitan Battery were administered to both groups. Significantly greater impairment was found for the alcoholics when compared to the opiate abusers on the Category Test and the Tactual Performance Test. Deficits on the Category Test have been reported for alcoholics in many previous studies. Of importance is the relatively greater impairment seen in the alcoholics when compared to their age-matched opiate abusing cohorts.

In addition, CTT was performed for 30 of these substance abusers and 12 matched controls. Both the alcohol and opiate

abusing groups showed evidence of cerebral ventricular enlargement and enlarged cerebral sulci. For both groups the rate of impairment by CTT scan was 7 percent. Though this would appear to be a low rate of CTT abnormality, it should be noted, first, that these were young (mean age 31 years) alcoholics and opiate abusers, so that rates of abnormality would not be expected to have reached a maximum. Second, the subjects were selected randomly and not because of persistent neurological problems warranting CTT scans.

These issues have rarely been studied in women, though Epstein and colleagues (1977) did include comparison of CTT abnormalities in women in their study. As noted previously, the sampling bias of that study does not make it possible to determine the actual risk for neuroanatomical impairment among alcoholics. Also, Hatcher et al. (1977) have found that alcoholic women, when compared to nonalcoholic women, show both spatial and verbal abstracting deficits, while previous reports on male alcoholics show only spatial abstracting difficulties.

Summary of Literature and Suggestions for Further Research

Three of the topics considered in the present review involve an epidemiological methodology: mortality from all causes, suicide, and liver disorders including cirrhosis. Review of the literature indicates that the risk for specific causes of death in association with alcoholism varies significantly depending on the sex of the alcoholics considered. The exact risk for these consequences remains unclear because of the particular epidemiological approach taken. Too often studies report differences in rate based on the general population of all males and females so that higher rates are reported for males solely on the basis of the higher incidence of alcoholism among men than women in the general population. Further work is needed using large-scale studies of male and female alcoholics to determine the risk for these consequences in the subpopulations that are obviously most vulnerable. From these data, ratios of observed mortality (suicide, liver disorders, and the like) can be expressed in terms of expected frequency among alcoholics.

Specific topics which are relatively unexplored are accidental deaths and self-injury. These topics have particular relevance for families of women alcoholics since accidents and injury may involve dependent children in the home. For example, accidental

fire in the home or increased incidence of auto accidents has particular relevance for women who are more often the caretakers of small children.

Very significant gaps exist in our current understanding of the incidence of other drug abuse among women alcoholics. Almost all the data on concurrent use of opiates and alcohol have involved men. No large-scale studies of female alcoholics have looked at abuse of other sedative drugs such as chlordiazepoxides which are often used in the management of withdrawal symptoms in alcoholics.

The incidence of brain pathology and cognitive dysfunction in women alcoholics has been largely ignored. Some of the reported dysfunctions have been shown to be reversible in the male samples employed. Possibly treatment of alcoholism is facilitated by concentrating on the alcoholic who has been detoxified for a sufficiently long period of time for these cognitive deficits to be reversed.

While genetic consequences of alcoholism for offspring of alcoholics appear to have been demonstrated in men, less is known concerning the effect in women. A merging of biological (genetic) and psychosocial strategies is urgently needed. The female in her role as mother and primary care giver may be particularly potent as a figure for modeling behavior in her children. The way in which genetic vulnerability is or is not expressed may depend on the salience of such familial environmental factors (e.g., role modeling) for children biologically at risk. The genetic vulnerability to alcoholism, if further demonstrated, may also be differentially expressed depending on the presence of other psychiatric pathology in the family, particularly depression.

Finally, psychophysiological correlates of alcoholism would appear to hold promise for understanding the biological mechanisms involved in the psychological phenomenon known as "craving" for alcohol. Insomnia and sleep disregulation have been reported to be prominent features in the male alcoholic and appear to show the most consistency among the psychophysiological correlates explored thus far. Further research is needed to determine the incidence of sleep disregulation in women alcoholics and how clinical management of these sleep disorders affects sobriety.

B. Introduction: Psychosocial Consequences

Steven J. Wolin, M.D.

In the second half of our paper on biological and psychosocial consequences of alcoholism for women, we consider the correlates and consequences of alcohol abuse in the psychological and sociocultural spheres. For women alcoholics, this area of research is almost untouched, as very few studies have been attempted which specify female alcoholics as the sample population. The few reports on psychosocial consequences of abusive drinking for the woman refer mainly to the wife of the male alcoholic. We could discover few references, for example, on the consequences to family, job, or peers which focused on female alcoholics. We can only assume, therefore, that work in this direction is necessary and potentially quite valuable.

The sections which follow outline the work that has been done to date on consequences of drinking problems, emphasizing especially the female alcoholic. We look first at some reviews of psychological factors associated with alcoholism in women and demonstrate the difficulties in separating cause from consequence. Then we look at alcoholism and the marital relationship. In these studies authors have focused on family factors in alcoholism, regardless of the sex of the drinker. Finally we touch on the larger social field of the alcoholic woman. After this review of known psychosocial consequences, we offer a perspective on future research in the psychosocial field and demonstrate what logically can be expected from a variety of research methods possible at this time.

Review of Research

Individual Correlates. Several recent reviews have summarized the current state of knowledge concerning psychological correlates of alcohol problems in women (Schuckit and Morrissey 1976; Beckman 1975, 1976; Gomberg 1976). Women with alcohol problems apparently differ from their male counterparts in several

316-863 O - 80 - 6

ways. Female alcoholics, as a rule, are older and are likely to have suffered a recent loss or family crisis which precipitated their abusive drinking (Curlee 1969; Fort and Porterfield 1961). They also are more frequently depressed than the male alcoholic and show a variety of signs and symptoms which have led several investigators to conclude that, as a group, women alcoholics are more often mentally ill (Schuckit 1973; Rathod and Thompson 1971; Curlee 1970). Using measures to test mood and self-evaluation, women alcoholics are frequently clinically depressed and have low self-esteem (Kinsey 1968; Wood and Duffy 1966).

Women's drinking patterns also differ from those of the male alcoholic. Though starting abusive drinking late, they have a telescoped or shortened interval between early-problem and late-stage-symptomatic drinking. There is little time between excessive drinking and treatment onset (Curlee 1970; Elder 1973; Lisansky 1957; Sclare 1970; Wanberg and Knapp 1970). They frequently marry an alcoholic and these marriages often are unstable, resulting in a high rate of separation and divorce. Their drinking is more often a solitary affair than is the male alcoholic's (Rathod and Thompson 1971; Lisansky 1957; Wanberg and Knapp 1970). Male alcoholics more frequently report losing jobs and friends because of their drinking, as well as having more arrests (Rimmer, Pitts, and Reich 1971).

These several associations between alcoholism in women and their individual personalities or behaviors illustrate two concepts: (1) women who develop drinking problems show different patterns and characteristics from the male alcoholics, and (2) social and environmental influences may account for many of those differences. Since none of the above cited studies examined their sample prior to the development of problem drinking, the intertwining of etiological and consequential findings will persist. This appears especially true for the woman alcoholic, who more readily links her drinking to external stresses and specific precipitating situations (Curlee 1970; Fort and Porterfield 1961; Lisansky 1957). Being more sensitive to social constraints and social disapproval, her tendency to a reactive depression is greatly encouraged once drinking begins. Her secretive behavior only reinforces an accelerating pattern of diminished self-esteem, withdrawal from her social world, and depression leading to further drinking bouts. Once the cycle has begun, "consequence" has become "cause" and the factors blur.

Marital Correlates. It was noted above that marriage for the alcoholic woman is an unsteady affair. Fox (1956, 1972) reported that the husbands of alcoholic women tended to be less tolerant

of their spouse's drinking than wives of alcoholic men seem to be. She observed that men are more likely to leave their alcoholic spouses and often fight for the custody of the children in court. Fox also attempted to classify the typical husband of the alcoholic woman, just as the wives of alcoholic men have been clinically "typed." She described (1972) the "long suffering martyr" who treats his wife like a child, the ambivalent man who repeatedly leaves in anger but begs to return, the dependent husband who wanted a wife who would mother him but finds himself married to a woman whose dependency needs are as intense as his own, and the hostile sadistic man. Unfortunately, these clinical observations have not been substantiated by any systematic research.

Lisansky (1957) demonstrated some of the social class and socioeconomic factors involved in the fate of families with an alcoholic woman. In a study of alcoholics sampled from two settings (prison farm versus outpatient clinic), the two groups of women appeared to have quite different life experiences. Eighty-seven percent of all the women were married at one time and one-third were currently or previously married to alcoholics. The prison farm women had a particularly high rate of divorce and those who were still married frequently had husbands who were physically abusive, provided little economic or emotional support, and were heavy drinkers themselves. While the outpatient alcoholic women were more emotionally and financially secure, they experienced conflict in other areas. Of those alcoholic women who were separated or divorced, 75 percent of the outpatient sample were caring for their own children, while only 35 percent of prison farm sample were doing so. Thus, specific consequences were tied to socioeconomic status.

Rimmer (1974) interviewed a sample of alcoholic women and their husbands from a private psychiatric hospital. Nine of 25 husbands interviewed were either alcoholic or excessive drinkers, and 15 of the 25 were considered to have a psychiatric illness. In four cases the husband's illness, including cases of alcoholism, had antedated the wife's drinking problem, while in five others the onset of the husband's illness was approximately simultaneous with that of the wife's alcoholism.

From these two studies, it would appear that women alcoholics are frequently married to men with psychiatric problems, including alcoholism. It is possible, as has been suggested by numerous investigators of the alcoholic man, that alcoholic women select such men as spouses, that the choice of mates is limited by psychiatric illness, or that marital partners develop mental illness together, with varying expression. Furthermore, findings such as

these have caused several investigators to label those marital dyads, where drinking in *either* member has persisted over an extended time and the relationship has remained intact, as "alcoholic couples" in "alcoholic families" (Steinglass 1977; Davis et al. 1974).

Studies of the interaction patterns in the alcoholic couple demonstrate conflict of long duration, with a high frequency of quarrels that remain unsettled (Bullock and Mudd 1959; Bailey, Haberman, and Sheinberg 1965). It appears that one factor associated with this unstable and volatile situation relates the poor match between each spouse's perceptions of himself/herself and his/her partner's perception of him/her. In a series of studies (Drewery and Rae 1969; Rae 1972; Rae and Drewery 1972), a type of couple was defined according to the Pd score of the wife (nonalcoholic) on the MMPI. The "high Pd couple" experienced considerably more conflict and had the most abnormal marriage, according to the criteria of interpersonal perception measures. Low Pd couples were virtually indistinguishable from normal nonalcoholic couples on these measures. The principal difficulty in the high Pd marriage was considered to be the poor match between self-descriptions and spouse descriptions and the failure on the part of *both* spouses to anticipate this poor match. Furthermore, Rae and Drewery found that both members of the high Pd couples had confused sexual identifications. Consequences for the marriage were markedly different for the high and low Pd couples. While both groups experienced similar conflicts over dependence and independence, in the low Pd marriage the wife saw the husband as far more independent and masculine than he saw himself, despite his inadequacies. She also saw herself as highly feminine and dependent, despite the fact that she had assumed more than an equal share of the family responsibilities. The wife's attitude appeared to have stabilizing effect on the marriage and perhaps assisted the ambivalent husband in resolving his dependency conflict. By contrast, the couples in which the wives had high Pd scores were unable to achieve stability in their marriages. Their marital interaction was competitive rather than complementary, and their conflict over dependency needs appeared to undermine treatment efforts. Unfortunately, these studies focused on marriages with alcoholic husbands. A comparison study for females is needed to eliminate or confirm any relationship between sex and marital stability on this interactional dimension.

Other aspects of the marital interaction have been related to instability in the alcoholic couple. Noncohesive marriages, in which the two members give and receive little affection, have few

socially desirable phrases to describe each other and have pessimistic opinions about the future of the marriage, show treatment outcomes several times worse than for comparable cohesive couples (Orford et al. 1976). Communication patterns have been studied by others and shown to be disturbed and less successful than in nonalcoholic controls (Hanson, Sands, and Sheldon 1968; Gorad 1971; Kennedy 1976). Once again, these couples are primarily alcoholic husband, nonalcoholic wife dyads, and, even though their focus is on the marriage, comparable findings for the reverse combination cannot be assumed.

Whole Family Correlates and Consequences. Any discussion of the psychosocial consequences of alcoholism is incomplete without some outlining of the effects on the family as a whole when one or both parents drink excessively. Higher rates of separation and divorce, economic insecurity, prolonged absence from the home, and high incidence of physical, emotional, and psychosomatic illness among all family members are well documented (Channing 1927; Holden 1945; MacKay et al. 1963; Chafetz and Hill 1970; Chafetz et al. 1971). The results of a study by Chafetz, Blane, and Hill (1971) are representative of the picture of alcoholic families which emerges from numerous other reports (although none that we could find compares families with male versus female alcoholics). Several indices of family structure and stability successfully distinguished between lower-middle class urban families with and without alcoholic parents. Forty-one percent of the alcoholic parents were divorced or separated, as opposed to 11 percent of the nonalcoholic parents. In intact alcoholic families, raters judged that 60 percent of the parents had poor marital relationships, compared to 11 percent of the nonalcoholic couples. Prolonged separation from one parent was more likely to have occurred in alcoholic families by the time a child had reached midadolescence. Economic marginality also characterized these families. The children in families with an alcoholic parent were significantly more likely to have suffered a serious illness or accident, to have experienced difficulties in school, and to have had some contact with the police or the courts. These data clearly suggest that the alcoholic families are not functioning in the two areas Parson and Bales (1955) have proposed as the essential tasks of the American nuclear family: (1) the nurturing and socialization of children, and (2) the stabilization of adult personalities.

Over the past 15 years, a significant change has occurred in the study of alcoholics within the context of their families. Where earlier studies attempted to find specific causes for the drinker's

behavior, investigators now began to focus on the process of adjusting to the alcoholism and the possible factors that might determine the quality of the family's adjustment. This shift to the analysis of consequences began with Jackson's description (1962) of a series of seven stages in the family's response to an alcoholic husband. The investigator based her views on observations of Al-Anon wives. She viewed the family as a social system with interdependent parts, such that any loss in role responsibilities for one member disrupted the prior family homeostasis.

Jackson's studies began the process of classifying families depending on their reaction and contribution to the ongoing family problem, including the spouse's alcoholism. Lemert (1960), then Ewing and Fox (1968), also applied these early systems concepts to the alcoholic family. In the latter study, the concept of a homeostatic mechanism was proposed in which the two spouses make an "implicit interpersonal bargain" in their marital relationship assuring that each spouse's behavior complements the other's. They suggested that the alcoholic marriage is highly resistant to change because both members have similar personality dynamics with prominent conflicts around dependency needs. Since a cyclical system which corresponds to changes from sobriety to intoxication in the alcoholic member tends to reinforce itself with conflict expressed by one spouse and then the other, the authors proposed that only reciprocal changes in both spouses could alter the family homeostasis.

The systems model of functioning in the alcoholic family has been further elaborated by Steinglass and his associates (1971*a*, *b*). They described several cases of family interaction where it was felt that alcohol abuse had a *stabilizing* effect on interaction. This stabilization, resulting in highly predictable, stereotyped, and repetitious dyadic behavior, contributed to the maintenance of the pathological system. Steinglass et al. have observed the interaction of several couples, including some female alcoholics, during a period of experimental intoxication. They report the clinical observation that, while a variety of "causes" might have begun the drinking problem, it was the "adaptive consequences" of abusive drinking which seemed to perpetuate it (Davis et al. 1974; Steinglass et al. 1977). These interesting single case findings await a rigorous study, which is currently in progress in our laboratory in Washington, D.C.

We also have attempted to study some long-term psychosocial consequences of alcoholism in families. In a recently completed study of whole families with alcoholism in one parent, blinded

raters were able to predict which families would produce at least one alcoholic child. The families were divided into those which had alcoholism in only the parental generation (nontransmitters) and those with alcoholism in two generations (transmitters). Structured interview data collected from all available family members focused on selected areas of normal family living termed "family rituals" (e.g., dinnertime, holidays, weekends, ceremonies, etc.). The quality of family life which was rated related to whether the behavior of the alcoholic parent altered the previous rituals of the family or whether, on the other hand, the family could maintain its rituals despite the influence of the alcoholic parent. The findings demonstrate that those families in which holidays and dinnertime were predictable and were least altered during the period of heaviest drinking had a significantly lower rate of alcoholism in the children's generation (Wolin, Bennett, and Noonan 1976, 1978; Bennett, Wolin, and Noonan 1976).

By comparing two groups of families which were similar on all demographic measures, the specific consequence of alcoholism behavior invading the interior of family life could be demonstrated. This work seems particularly relevant for the female alcoholic. As Gomberg (1976) noted, the female's drinking behavior will show its effect most in the emotional and interpersonal aspects of her life. The male alcoholic loses more jobs, gets arrested more, etc. Future studies therefore should be directed to those variables which are likely to reflect the woman's psychosocial orientation, the family and her interpersonal relationships.

Other contributions have been made by systems theorists to problems of the alcoholic family. Bowen (1974) has described a model where each family member contributes to the "dysfunction" of the alcoholic. A recent case study (Carter 1977), using the systems treatment approach, explores many issues involving the alcoholic wife interacting with her family. Ward and Falliace (1970) have extended the systems approach to the entire social environment of the alcoholic, proposing a covert system of pathological complementary behavior patterns. Steiner (1971) used a transactional analysis approach to describe this same mode. He portrayed the roles enacted by family members and community members as complementary to the "games alcoholics play," thus enabling their maintenance. In summary, there can be no doubt that the systems approach to the alcoholic family, primarily through its understanding of consequences in the psychosocial sphere, will make a contribution to our understanding of the continuance of problem drinking.

Recommendations for Future Research on Psychosocial Factors

Findings in behavioral science research can be expected to have benefits and limitations directly dependent upon the study design and the subject sample. Typically, research projects will focus on one of three study designs—individual case studies, small group comparison studies, or large group surveys—determined by the size of the sample. In each case, the methods available, as well as the analytic approach to the data and the specific research objectives, will directly emerge from these basic decisions.

This is no less true in the field of alcoholism and most especially true when searching for consequences and correlates to the alcoholism problems of women. Research designs in which large groups of women are surveyed about the effect of alcohol problems on specific aspects of their lives (e.g., divorce rates) will result in very different findings from a study in which a small group of women with certain demographic characteristics in common (e.g., age, religion, etc.) are compared to a second group of women without those characteristics. Therefore, in any recommendation regarding future research efforts in this field, we must be aware of the very real limitations in all studies.

Keeping in mind these general limitations to any one approach, the following issues might well be addressed in research projects in this special area of alcoholism:

1. *Case Histories.* While the limitations and questionable accuracy of retrospective interviewing are real, there are substantial benefits to be gained from well-done, comprehensive case studies. The female alcoholic's lifestyle has been poorly documented, especially in a dramatic, humanistic, well-written format. The case history serves several purposes. It often reaches a wide audience, because of its readability. It presents broad wholistic perspectives to issues and takes into account theoretical models (such as unconscious conflicts) which do not lend themselves to more rigorous validation.

   While the single case study is of potential value, several controls need to be exercised over technique and format. First, the question of *context* arises in all case studies. What social group is the subject from? What socioeconomic class? What ethnic group? These demographic variables and others must be revealed so that one case study can be compared with another. Second is the question of

retrospective data gathered during unstructured interviewing. Material agreed upon (validated) by several sources (e.g., family members) is far superior to that gathered from one person. Material corroborated by records similarly adds greatly to the reliability of subjective recollection. Third is the question of the biases of the observer — always present, rarely acknowledged.

The historian, the ethnographer, the psychoanalyst, and others who traditionally report single case studies, each have their peculiar theoretical model which necessarily constrains the data. While it cannot be avoided, the perspective of the observer or therapist can be stated.

For alcoholic women, particular advantage would be found in the "naturalistic observation" approach, where subjects could be observed, preferably during drinking episodes. The advantage of such realtime ethnographic methods is that the they probably permit the uncovering of issues not readily available through interviewing, testing, or questionnaires, i.e., the unacceptable, the alien, the denied observations of one's own behaviors.

In sum, we can see a value in supporting case study research with carefully controlled methods, whether it focuses on the individual woman, the woman involved with her nuclear and extended family, or a selected society. Given our lack of knowledge of the natural history of alcohol problems for women, these studies will probably go far to demonstrate the psychosocial consequences of female alcohol problems.

2. *Small Group Studies.* Many of the problems found in case studies are well controlled in studies in which two groups of women subjects are compared on specific preselected variables. For example, we need to know how middle-class women with alcohol problems differ from a lower class comparison group with regard to biological, interpersonal, and social consequences. We also need to compare alcoholic women to normal women as well as alcoholic men on several variables relating consequences of drinking. In general, if the field has a particular shortcoming to date, alcoholism research has been especially remiss in selecting adequate control groups, including normal women, alcoholic men, women with other psychological conditions, etc.

The instruments of small group studies are the structured interview, the test procedure (like the MMPI, or a communi-

cation measure), or limited observations in naturalistic settings. The limitations of such studies relate to the validity and applicability of the findings for the alcoholic woman. We might do well to look at those factors within the family, which are most affected by internal stresses such as sexual dysfunction, communication problems, loss of role, loss of intergenerational boundaries, and compare subjects with others.

3. *Studies With Large Samples.* Surveys and questionnaires are used when the sample size approaches or exceeds 100. Subjects will have important characteristics in common and will be counted for the prevalence of that specific attribute (e.g., divorce rate, drinking practices, etc.). These studies have the advantage of sample size, and we have much to gain from such surveys with the female population, especially considering the rapidly changing role definitions our society is experiencing.

Where should specific gaps be plugged? We would suggest that all of the above approaches be directed to (1) careful studies of the natural history of alcohol problems in women in differing sociocultural contexts, (2) detailed observations *within* the home and extended family, and (3) integrating those biological, psychological, and interpersonal factors which make alcoholism different for women.

Discussion Summary

Discussion Leaders: LeClair Bissell, M.D.
Ben Morgan Jones, Ph.D.

Physiological questions — A number of physiological differences between men and women may affect drinking and its consequences. While there is considerable interest in the relationship between menstruation and various physiological and psychological changes, there has been little study of cyclical changes in men. However, both sexes have biological rhythms.

There was considerable discussion about data on cirrhosis which suggest that women seem to have higher rates of cirrhosis (twice the rate of men) and seem to contract cirrhosis sooner—one study reports an average of 13 years after initiation of heavy drinking among women and 20 years after among men. It also appears that they have a higher mortality rate from cirrhosis and tend to die at an earlier age. Reasons for this difference were sought. Patterns of drinking might be a factor. Women alcoholics tend to be continuous rather than binge drinkers, which may be more destructive to the liver. Nutritional factors should be explored. Perhaps other drugs, including medication, may play a role. There is the possibility that alcoholic women may drink more in relation to their body weight than alcoholic men. One participant felt it would be useful to see whether alcoholics who are methadone maintenance clients seemed to develop cirrhosis more often or more quickly than other alcoholics.

Dr. Jones indicated that, in their experiments, some volunteers have been unable to drink as much as was desired for purposes of the research. It was suggested that it would be interesting to try to determine why they were unable to do so.

Death certificates as a data source—It was reported that, in New York, if "alcoholism" is listed as a cause of death, a medical examination is required and the body must therefore be sent to a morgue. Since medical examinations are costly, if a physician is reasonably sure that a person died of natural causes, he or she will avoid listing alcoholism as a cause of death. If the medical examination requirement were removed, it should be possible to get more and better data on alcohol-related deaths in that State.

Other similar factors may make it difficult for researchers to investigate physiological consequences of alcoholism using secondary data sources.

Depression—The frequency of affective disorders among female alcoholics was raised earlier. This topic was discussed at some length, with particular emphasis on the need to "sort out" depression and alcoholism problems. Which is primary, which secondary? Are they two different manifestations of the same problem? What is the relationship of estrogen levels to alcoholism and depression? The question was raised as to whether women are actually more often depressed than men. It was reported that they are diagnosed as depressed two or three times as often as men. If depression is more common among women, is it more common among alcoholic women than among nonalcoholic women? (Reportedly, men in alcoholism treatment are more often depressed than men in the general population.) To what extent is depression among female alcoholics due to a physiological difference between women and men and to what extent might it be a response to female sex roles? How do physiological and psychosocial factors interact? Measurement of depression was discussed; Dr. Hill indicated that some good physiological measures of depression exist, and these could be used instead of, or in addition to, psychological measures to determine existence and degree of depression among experimental subjects.

Families of alcoholics—Dr. Wolin expanded upon his data from the Center for Family Research at George Washington University Medical School, explaining further the differences between "transmitter" and "nontransmitter" families. Where alcoholism was "subsumptive"—where it invaded and disrupted family life and traditions—then transmission to the child was likely to occur. Where alcoholism was "distinctive"—where it did not affect family rituals—alcoholic family members were pushed out following an initial period of denial by nonalcoholic family members, but alcoholism was not transmitted to the children.

Many aspects of the families of alcoholics deserve further study. It was noted that most previous focus has been on the wives of alcoholic men; we need to look more at the husbands of alcoholic women and determine the characteristics of husbands who stay versus those who leave. Profiles of the children of alcoholic parents are needed, and studies to determine which is most damaging—an alcoholic father, mother, or both. Symptoms in children should be investigated; for example, the Friday night asthma attack, bed wetting, poor teeth among middle-class children. More information is needed so such children can be identified early and can get help.

Methodological issues—Many methodological concerns and recommendations were presented. The importance of female interviewers and analysts, to obtain valid data and help interpret it, was stressed. The roles of biology, social behavior, and lifestyle in relation to alcoholism need to be "sorted out." The goal might be to be able to predict what kind of woman will suffer what kinds of consequences in what life areas, and when in her alcoholic career. This requires longitudinal studies, with emphasis on looking at the "history" of alcohol problem development. Controls are needed. Three levels of study and analysis were suggested: development of scales and procedures for use with women only, procedures to compare alcoholic women and nonalcoholic women, and procedures to compare men and women. Scales now used tend to be male-oriented; they need to be revised for use with both sexes, or used only with males.

The importance of investigating consequences in the context of time since last drink was emphasized. Sometimes, an alcoholic is being interviewed who has not had a drink in 2 years; sometimes the last drink was the day before. Time since last drink should be clearly specified. Some researchers feel it takes 3 years for an alcoholic to "clean up physically" after the last drink. Individuals are not at their own "baseline" 3 weeks after withdrawal. Use of other drugs is also an important issue. The Silverhill study, for example, found brain damage; it did not mention that the patients were on tranquilizers.

Many additional physiological studies are needed. For example, hormonal studies have been very limited. Dr. Jones indicated that no one else is attempting what his group is doing; such experiments are extremely expensive.

Alcohol Use With Other Substances: Discussion

Discussion Leader: Samantha Ross, Ph.D.

The evening session was led by Dr. Samantha Ross, who presented specific data from the Hazelden Foundation. Because of the small group, it became a discussion session involving the following individuals as well as Dr. Ross: Dr. LeClair Bissell, Ms. Ruth Cooperstock, Dr. Edith Gomberg, and Dr. Shirley Hill.

Major areas of discussion are summarized below:

Incidence—Misuse of other drugs along with alcohol is quite common, and women alcoholics appear more likely than men to use other drugs along with alcohol. In a recent year, the Hazelden Foundation reported that 32 percent of its admissions were for combined alcohol and other drug problems. Sedatives and tranquilizers are the drugs most often combined with alcohol. It was estimated that 60 to 70 percent of female alcoholics may use diazepam (primarily Valium). Women requesting treatment usually report 3 or 4 years of prescription drug use. Whether alcohol or drug abuse usually comes first is not known.

Valium (diazepam)—Cross-addiction involving diazepam and alcohol is a major problem, because of the interactive effects and the difficulties of withdrawal. A person who is using diazepam requires less alcohol to get high and will suffer more blackouts than an alcoholic not using it. Many cross-addicted patients have a much worse time getting off diazepam than alcohol. Withdrawal symptoms may be encountered even if diazepam has been used only for 1 month, and there are enormous variations in prescribed dosages (6-120 mg) and in individual effects. While some researchers have believed that addiction does not occur below 40 mg of diazepam a day, more recent data suggest addiction can occur at a dosage level as low as 6 mg. Treatment personnel involved in detoxification of alcoholics report that withdrawal symptoms typically occur between the 9th and 12th day after cessation of use, and nervous tremors and high anxiety states may continue for a long time. A major reason is the long half-life of diazepam; it appears that the half-life becomes shorter with increasing patient age, and that some sex differences exist.

Development of Cross-Addiction—A number of scenarios for the development of cross-addiction in women were suggested. For example:

- A working woman alcoholic uses drugs during the day and alcohol in the evening, when its use will not be detected.
- A woman who is dependent upon a prescription drug may be told by her doctor that she must stop or cut down on its use, so she turns to alcohol as a substitute.
- A woman with alcohol problems is sent to a physician. She may be referred to a psychiatrist, or told to cut down on drinking and take some Valium to calm her nerves. There is often no followup.
- A woman in a traditional passive role goes to a doctor, whom she views as a solver of problems. Socialized to be more involved with her body than most men, she is more likely to go to a physician when she has a nervous problem or a minor physical problem. She may also have an alcohol problem. The physician prescribes pills; she accepts his diagnosis and treatment and takes them — and continues to drink at the same time.
- A woman with physical problems, such as lower back pain, is prescribed diazepam. Her alcoholism is never discussed or identified.
- A woman working the 4:00 p.m. to midnight shift begins to use pills as a way of staying awake and functional. She may be on an assembly line, or be a nurse, telephone operator, or airline employee. Off the job, she may find alcohol has a heightened effect in combination with the pills.

"Hollywood Death"—So named because of the show business personalities such as Dorothy Kilgallen who have suffered them, "Hollywood deaths" are accidental deaths, most frequently caused by combination of amphetamines and alcohol. Women are at greater risk than men for such deaths, because they are more likely to have pill prescriptions and to overdose.

Prevention—A number of positive prevention actions were recommended to decrease cross-addiction and dangerous drug-alcohol interactions. They include (1) *physician education*, considered to be of primary importance; (2) *patient education*, some of which might occur in relation to the women's movement, and (3) legislation limiting availability and accessibility of drugs which are known to interact with alcohol. It was suggested that much public and physician awareness could be created through one highly publicized malpractice suit brought against a physician who

prescribed a drug to a known alcoholic who subsequently died from alcohol-drug interaction. Ms. Jessica Hill from the Non-Medical Use of Drugs Directorate in Toronto presented a film and flipchart from a Canadian campaign designed to educate physicians and other health care professionals about the dangers of alcohol-drug interactions, with a major emphasis on tranquilizers such as diazepam.

Treatment Implications It is often said that women are harder to handle than men in psychiatric situations and that they are worse patients in alcoholism detoxification and treatment programs. It was postulated that undiagnosed cross addiction may be a major contributing factor.

Recommendations to Full Group—The following recommendations for research in the area of alcohol and other substances were presented to the total workshop group by Dr. Bissell:

- More studies are needed in the while area of cross-addiction. Some specific areas for study are suggested; the whole field should be thoroughly researched.
- Research on "Hollywood deaths" is needed.
- Studies should address the question of whether alcoholic women are typically "harder to handle" in psychiatric situations, or whether this may occur primarily in cases of dual addiction.
- Research is needed concerning use of alcohol and other substances by workers on the 4:00 p.m. to midnight shift. These are mostly young, single workers.
- Studies are needed to investigate which come first in cases of combined alcohol-drug misuse, alcohol abuse or abuse of other drugs.
- Education of physicians, patients, and legislators in this area is badly needed.

Research Issues and Recommendations

Work Session Coordinators: Edward Klaiber, M.D.
Elizabeth Parker, Ph.D.

1. NIAAA should fund an alcohol research center which is interdisciplinary in nature, in order to study the biological and psychosocial aspects of alcohol abuse and alcoholism in women.

2. Alcoholism has biological and psychosocial consequences specific to women; therefore, a working definition of alcoholism in women and diagnostic criteria for alcoholism in women should be developed.

3. Research the unique biological characteristics of women which may relate to alcohol, including:

- Hormonal factors (menstrual cycle, menopause, post partum, hormones and their effect on cognitive function);
- Genetic factors (chromosomal changes, familial transmission and possible intrauterine effects in pregnant alcoholic women); and
- Affective disorders with studies of *neurotransmitters* (correlation of affective disorders and neuroendocrine processes).

4. Research the unique psychosocial characteristics of women which may relate to alcohol, including the investigation of:

- The changing roles of women in society;
- Cognitive functioning (as affected by social drinking and alcoholism in women);
- Sleep disturbance (in alcoholic and nonalcoholic women); and
- Familial factors (transmission and maintenance of alcoholism in women).

5. NIAAA should encourage and support research on the interrelationships of biological and psychosocial factors as they relate to alcohol problems in women. For example, stress stemming from life events may influence the neuroendocrine system and may

316-863 O - 80 - 7

result in changes in alcohol-related problems, both physical and psychological.

6. NIAAA should encourage the coordination of research and treatment in order to facilitate research and ultimately to improve treatment methods and results.

7. Conduct longitudinal studies of health consequences of drinking in women to determine the potential for predicting drinking problems.

III. Risk Factors Related to Alcohol Problems Among Women: Proneness and Vulnerability

Introduction: Risk Factors

Edith S. Gomberg, Ph.D.

First, let us be clear that we will be talking about *pre-alcoholic factors*, that what we mean by high risk or proneness is the presence, or the presence *in large degree*, of those variables which are associated with the development of problem drinking among women. We are talking about the antecedents of alcoholism and not the consequences—at least we are trying to separate the two. From our point of view, it is unfortunate that we have found it much easier to study women *after* they have developed alcoholic problems, a point at which antecedents and consequences are often inextricably mixed.

Why Study Antecedents or Risk Factors?

If the end is treatment and rehabilitation, such study may or may not be useful. It is useful to a therapist to know that drinking-by-spouse is an important antecedent or that a traumatic event preceded the onset of problem drinking—that information is useful, in a very direct way, in treatment. It may be less useful to know that the patient had a deprived early history and a stormy adolescence. The relevance of risk factor research is perhaps more clearly applied to primary and secondary prevention, because knowledge of the risk factors can make preventive efforts more effective. I believe that the comprehension of risk factors is highly relevant to treatment, too, because understanding where people are coming from makes for better therapy regardless of the particular treatment modality employed.

For purposes of clarity, we divide risk factors into four sets. First there are antecedents relating to *physiology or the biological self*. There is a fair amount of biomedical and genetic research in alcoholism and we examine it to see what it contributes to the prediction of alcoholism. Second, we examine data bearing on the question of psychological vulnerability. Psychological vulnerability

is hardly a new concept; it was thoroughly discussed in its relation to alcoholism by Jellinek (1960). Jellinek was acutely aware that it was necessary, but not sufficient as explanation, and that differences among societies in acceptance of large alcohol intake were also a primary predictor:

> In societies which have a low degree of acceptance of large daily amounts of alcohol, mainly those will be exposed to the risk of addiction who on account of high psychological vulnerability have an inducement to go against the social standards. But in societies which have an extremely high degree of acceptance of large daily alcohol consumption, the presence of any small vulnerability, whether psychological or physical, will suffice for exposure to the risk of addiction.

The concept of psychological vulnerability has resurfaced recently in relation to schizophrenia (Zubin and Spring 1977) and to other disorders. Third, we discuss those risk factors in *drinking behaviors per se* and the search for high-risk indicators in pre-alcoholic drinking. And finally, we mention a few of the *social environmental* factors which are relevant to drinking and to problem drinking.

Our information to date is crude and limited. We know little about the relative weight of different risk factors even when we know of their existence. Risk factors are significant only in their *association* with problem drinking. Our results are correlational. We should not say that a disrupted, deprived early family history is *causal*, only that it is associated more frequently and occurs significantly more frequently in the lives of women alcoholics than in the lives of women who do not become alcoholics.

Antecedents Relating to Physiology

There are many theories about nutritional deficiency, body build, allergy, and genetic predisposition to alcoholism. Most of these do not distinguish between men and women. Genetic theories are not concerned with sperm or ovum damage, directly, but rather with inherited, nonspecific predisposition. We discuss some current work in genetics and look at research relating alcohol to female physiological functions.

Genetics

A Danish-American research team has conducted a series of studies exploring the possibility of a genetic component in alcoholism (Goodwin et al. 1974; Goodwin et al. 1977). Subjects

were the children of parents with hospital diagnosis of alcoholism who were raised by adoptive parents. Sons of alcoholics, compared to adoptive controls, showed significantly more severe alcoholism. Results with daughters were equivocal and inconclusive: Daughters showed more proneness to alcoholism than the general population but so did a control group of women adoptees who were not born of alcoholic parents. This suggests that the fact of *adoption per se* is more overriding than the alcoholic or nonalcoholic nature of one's biological parents. The daughters of alcoholics did show more depression than the controls, but this difference appeared only when they were raised by their biological, alcoholic parents. Adopted women—whether their biological parents were alcoholic or not—did not show differences in depression diagnoses.

It seems important to note that the men studied were often heavy drinkers and that sons of alcoholics and control adoptees did not differ in the extent of heavy drinking. Among the women studied, 90 percent were abstainers or very light drinkers, suggesting that the taboos against women's heavy drinking may indeed act as cultural protection (Knupfer 1964). The findings also suggest that disruptive experience in early life and the difficulties which led to the children's adoption had a traumatic effect on the women adoptees, regardless of whether their biological parents were alcoholic or not. This would fit with other data which suggest that women who become alcoholics have more disruptive early life experiences than do men who become alcoholics.

Biochemistry

A number of investigators have posited that there are biochemical differences between people who become alcoholic and those who do not (Williams 1951; Fleetwood 1955). These viewpoints, dealing with enzymatic deficiencies or with "the resentment substance" have not concerned themselves with sex differences. Recent work on sex differences in the metabolism of alcohol and on sex differences in proneness to cirrhosis do suggest directions for future biochemical research.

Menstruation

Experimental questions have been raised about the relationship of alcohol and the menstrual cycle (Jones and Jones 1976*a*; Jones and Jones 1976*b*; Dubowski 1976). Findings are that women show higher blood alcohol level than men at equivalent amounts of alcohol, adjusted to body weight. Comparisons among young women show that sex hormone levels are also related to the metabolism

of alcohol; women tested at different phases of the menstrual cycle show differing blood alcohol levels with the same amount of alcohol; the higher blood alcohol levels being obtained during the premenstrual phase. Women taking oral contraceptives show differences in alcohol metabolism when compared with women not taking them (Jones, Jones, and Paredes 1976). Women, compared with men, show more impairment on memory tasks requiring inhibition or delay of response, although the sexes do not differ on immediate recall tasks (Jones 1975).

These findings about sex differences in response to the same amounts of alcohol do not necessarily tell us about etiology or antecedents of alcoholism but they do lend experimental support to the idea that women drink less than men for biological as well as social normative reasons, or perhaps social norms about prescribed/proscribed differences in drinking are related to biological differences.

The higher sensitivity to alcohol, i.e., the higher BALs which occur during the premenstrual phase do not explain biologically the frequently cited rationalization for a female drinking bout: premenstrual tension. Premenstrual tensions have often been cited as a cause or precipitant or stressor which leads to alcoholic drinking (Lolli 1953; Podolsky 1963; Belfer et al. 1971) but they seem an inadequate explanation of alcoholism since premenstrual tension occurs so frequently among women who do not become alcoholic. It may well be that there is an association between psychological disturbance and premenstrual tension and that alcoholic women will be drawn from this population of psychologically disturbed and premenstrually tense women: Some of the women in this population will become chronic aborters, others will show hysterical symptoms, some will show clinical depression, and some will become alcoholic. There are women who report premenstrual tension who show no psychiatric symptomatology or signs of disturbance at all. It appears that premenstrual tension is a stressor and, in this sense, etiological. For whatever reason, it appears to add one more source of stress to women we believe to have limited stress tolerance.

There are changes over time. As beliefs about menstruation change, it appears that premenstrual tensions are less frequently reported. Driscoll and Barr (1972) offer some information in a comparison of alcoholic and narcotic addicted women: Only one of the 100 alcoholic women interviewed offered spontaneously the information that she had extreme mood changes when premenstrual. Another study allows us to compare the percentage of women alcoholics who reported dysmenorrhea in the

same hospital setting in 1937 (Wall 1937) and in 1972 (Browne-Mayers et al. 1972); the figure was 80 percent in the former study and 23 percent in the latter.

The question has been confused: Are we suggesting that premenstrual tensions are responsible as *etiological*, i.e., as an antecedent agent in bringing on the behavior of alcoholism, or are we asking whether premenstrual tensions may act as trigger or *precipitant* for a drinking about for women who are drifting into, or already are, problem drinkers? These are two questions and I would argue that the findings reported by Jones and his colleagues relate to most of the female population. Regardless of where the woman fits, in the range from abstainer to alcoholic, she will probably have menstrual cycle variations in BAL with the same amount of alcohol. Premenstrual tensions are a psychophysiological state based on individual variations in physiological response and health and on attitudes toward sexuality and one's own body. Alcoholic women report frequently that they are triggered into drinking episodes by premenstrual discomfort; they are also triggered into such episodes by a variety of stresses, internal and external, momentary and long-lasting, mild and extreme.

It is important to note that menstruation, parturition, and menopause are discussed here under physiological antecedents although they are clearly complex, psychophysiological events.

Parturition

I know of no evidence which suggests that normal childbearing has been a stressful event for the problem drinking woman. On the contrary, since evidence indicates that she is often a very traditionally feminine woman, it is difficulties in the childbearing process which prove to be stressors. A relatively high proportion of women with drinking problems do report a history of difficulty in conception, miscarriages, hysterectomy, difficulty in labor, and infertility problems (Kinsey 1966; Wilsnack 1973). Seventy-eight percent of Wilsnack's subjects reported difficulties compared with 35 percent of normal control subjects. The question has always been whether the gynecological-obstetrical difficulties precaysd the problem drinking or followed it. From the age of the subjects involved (mean age was 42.9 for Kinsey's subjects of 44.3 for Wilsnack's) one might assume that the medical events preceded or overlapped with the beginning of problematic drinking. However, it is always difficult to judge: Curlee (1970) made the point that many subjects rationalized their drinking as caused by obstetrical disappointments, but they were often heavy drinkers before the fact.

A group of pregnant women without drinking problems have reported a *decrease* in the use of alcohol during pregnancy, citing a variety of reasons from nausea to fetal welfare (Little, Schultz, and Mandell 1976). While these subjects were not alcoholic (mean age was 26.5), we cannot automatically assume that women who are going to be alcoholic later in life behave differently when they are young women. This really needs study.

The fetal alcohol syndrome was first noted in 1973 (Jones et al. 1973) and has accumulated the largest bibliography on any phase of female alcoholism. While the syndrome exists, it is limited to those women who combine pregnancy and excessive intake of alcohol. There are women who drink heavily during pregnancy and there are also large numbers of women who were or are alcoholic and who have not drunk heavily during pregnancy and have not borne defective children. The fact that there are thousands of women in Alcoholics Anonymous and in various treatment facilities who have normal children does not seem to get much attention. I propose that we study the gynecological-obstetrical histories and examine many more children of problem drinking mothers before we link all female problem drinkers and the fetal alcohol syndrome with such certainty.

Menopause

The age of onset of alcoholic drinking would have to be in the late forties and in the fifties for the menopause to truly be an antecedent condition. The menopause has often been accompanied by depression because of the "empty nest feelings" of many middle-aged women (Bart 1971). It would be more correct, therefore, to speak of the crises of middle age as an antecedent condition rather than of menopause per se. Lolli (1949) has written of a stormy menopause which ". . . precipitates but does not cause the addiction." It is difficult to separate what is physiological stress and what are middle-aged feelings of abandonment and despair that precipitate alcoholic drinking.

For those who are already drinking excessively, menopausal hormonal changes may compound their difficulties, because there is some evidence of a relationship between hormonal status, excessive alcohol intake and cirrhotic difficulties in middle-aged women (Spain 1945; Wilkinson et al. 1971; Rankin et al. 1975; Morgan and Sherlock 1977).

If we sum up the information we have about physiological-genetic-biochemical antecedents of alcoholism in women and in men, the total is not impressive. Evidence for a genetic component is ambiguous. It is not yet clear how the information about

menstrual cycle and BAL is to be related to problem drinking. The data dealing with the fetal alcohol syndrome or liver cirrhosis are about *consequences* of heavy and alcoholic drinking and tell us little about why some women become alcoholic and others do not.

David Lester, a biochemist, opened a session on biomedical effects of alcohol (NIAAA 4th Conference: Research, Treatment, and Prevention 1974) with this comment:

> Although NIAAA supports a wide variety of studies, few, if any, focus uniquely on the causes, that is the etiology of addiction to alcohol, in spite of the recognition of the Institute that, "Long-term studies should be on large numbers of human subjects beginning early in life and continuing for many years to determine the genetic, biochemical, psychological, physiological, sociological, and cultural factors which may be related to the development of alcoholism."

Psychological Vulnerability

There are several psychological theories which explain the onset of problem drinking in a variety of ways. They fall primarily into three categories: (a) psychoanalytic explanation in terms of "oral fixations"; derived from earliest life experience, a character structure of oral passivity is formed on which alcoholism and other disorders are based; (b) personality or character trait theories which posit patterns of behavior, however acquired, often seen as necessary but not sufficient to explain problem drinking; (c) learning theories which view alcoholism as learned behavior dependent on the same contingencies of reinforcement and punishment as any other behavior. We will borrow from all.

First, a discussion of relevant early life experiences in childhood and adolescence, and second, some patterns of behavior which seem to relate to the development of problem drinking.

Early Life Experience

There is a sizable amount of empirical research data which supports the idea that disruptive early life experience relates to alcoholism among women (and among men) later in life. Furthermore, the research indicates that such disruption is more often present in women's histories than in men's. Such disruption may be loss of a parent or other close relative, or psychiatric problems in the family. There is reason to believe that women who manifest deviant (e.g., delinquent) behavior have more disruptive early histories than do men (Robins 1966).

In every comparison (person raised by someone other than parents, problem drinker in the family, etc.), the women alcoholics of Lisansky's (1957) study showed greater percentages than did men alcoholics, although both were drawn from an outpatient clinic population and matched well on social background variables. The importance of considering social class in making comparisons is pointed up by the fact that the prison women alcoholics of Lisansky's study showed much higher percentages of early life disruption than did the outpatient women. Rosenbaum (1958) reported that 40 percent of her women patients had a parent missing during their childhood and DeLint (1964) reported 37 percent of women alcoholic subjects to have lost a parent before age six, as compared with 13 percent of his male subjects. Social class differences recur: 43 percent of Curlee's (1970) women patients report early childhood disruption, but 72 percent of Kinsey's (1966) patients report absent fathers. Curlee's work was done in a private sanitarium, Kinsey's in a State hospital. Of course, these questions about childhood will vary from one study to another, and there are methodological questions, but the consistency of the findings do strengthen the case.

Alcoholism and psychiatric problems in the family seem to occur more in the histories of alcoholic women than of women in the general population and more than of men who are alcoholic. A very high incidence of alcoholism in a parent or sibling is reported by Sherfey (1955), Lisansky (1957), Wood and Duffy (1964), Johnson, deVries, and Houghton (1966), Winokur and Clayton (1967, 1968), Rathod and Thomson (1971), Jacob and Lavoie (1971), and Jones (1972). In most studies, the incidence is not only larger than in the female general population, it is larger than the incidence among male alcoholics. Winokur and Clayton, in careful studies, also report more psychiatric problems in the family background of women alcoholics than of men. Schuckit (1971, 1972) has reported more affective disorder among the relatives of women alcoholics than among men alcoholics.

This kind of disruptive early history is also associated with a variety of psychiatric disorders besides alcoholism. We may therefore note that such early childhood experience is associated with the later development of problem drinking, but that there apparently are other variables which determine which pattern of disturbed behavior the person will manifest in later life.

Birth order is an unclear variable in alcoholism among women. Smart (1963) and DeLint (1964) found later-born daughters overrepresented among alcoholic women and see the intervening link as early parental loss. Blane and Barry (1971), on the other hand,

view last-born status as significant in male alcoholism but not in female alcoholism.

Adolescence

Our concern here is not with adolescent alcoholism but with the adolescent behavior patterns of the person who will be a problem drinker as an adult (or as an adolescent). The only longitudinal data we have is from Jones' (1971) followup of girls who participated in the Cakland Growth Study. Although the number of problem drinkers is very small, Jones' observations and test measures are careful and her findings are logically consistent with clinical reports of adolescence given by women alcoholics as adults (Wood and Duffy 1964). Adolescence is a stormy upheaval and some of Jones' descriptive terms are "pessimistic," "withdrawn," "unable to accept a dependency relationship," and "submissive as youngsters, rebellious as adults." There is an important point of adolescent similarity between female and male adolescents who later become alcoholics; Jones describes it as ". . . unstable, unpredictable impulsivity." Other terms she uses to describe the girls (but not the boys) are ". . . depressive, self-negating, distrustful tendencies."

Zucker (1974), who has studied 15- to 18-year-old boys and girls, describes the adolescent heavy drinkers as similar to adolescents who become alcoholic later in life:

> . . . persons identified in adulthood as problem drinkers . . . have had similar characteristics in their earlier years to those of the adolescent alcohol abusers. The data indicate an earlier pattern of behavior involving greater impulsivity and antisocial activity, earlier sexual activity, aggressiveness, and greater than normal use of other drugs in addition to alcohol . . .

The Jessors' work (1975) shows a developmental relationship between onset of adolescent drinking and several attributes, including general deviant and problem-prone behaviors. Their work underscores the importance of alienation and low expectation of achievement among adolescents who are likely to develop problems. Research with college students (Jessor, Carman, and Grossman 1968) showed that the lower the expectation of need satisfaction, the greater the recourse to alcohol and the greater the alcohol-related consequences, particularly among women students. Related work has been reported recently (Noel and Lisman 1977*a* and 1977*b*) with women college students: The first study shows an association between heavy drinking and high scores on depres-

sion tests. In an experiment in which women students are placed in a learned-helplessness paradigm, these students experience more depression, more hostile affect, and more drinking than the controls.

Pre-adult experience which may be associated with later onset of problem drinking probably includes significant disruptive experience in early childhood and behavior which include:

> depression, pessimism, low expectation of achievement, lack of trust of others, distrustful tendencies, low self-esteem and self-negating behavior, impulse control problems, sometimes with overt submissiveness.

There are two patterns which seem to emerge from the descriptions: (1) the early adolescent pattern of overt submissiveness ("rebellious as adults"); (2) a pattern which makes the adolescent girls less distinguishable from the adolescent boys. It is a pattern of acting out, aggressiveness, impulsivity, precocious sexuality, and antisocial behavior. If both groups of girls are heading toward adult drinking problems, it is no wonder that we see heterogeneity —at least two different groups of women problem drinkers. And, hazarding a guess, the acting-outers present problems of an alcoholic nature earlier than do the others.

Patterns of Behavior Relating to Development of Problem Drinking

We are on shaky ground here because data are limited and the studies involved are often not methodologically sound. With this reservation, let us look at some of the behavior patterns suggested for psychological vulnerability.

Depression. It is easy to demonstrate depression in women who are already problem drinkers. What is our basis for assigning depression a very important role in the etiology of female alcoholism? Our basis consists of: Jones' picture of the adolescent who later becomes a problem drinker; experimental work which demonstrates a relationship between reported depressed, or pessimistic feelings and heavier alcohol intake; and a great deal of family study by the research group at Washington University in St. Louis, which demonstrates that family disturbance and affective disorders occur significantly more frequently in the histories of women patients. One of the members of this group, Schuckit, believes that alcoholism which is "associated with an affective disorder," and therefore secondary, has a better prognosis than female primary alcoholism. We are on fairly strong ground here: Depression is consistently reported as an important antecedent of female alcoholism.

Lack of Trust. Here we are making inferences from early family histories and from post hoc reports of alcoholic women so our evidence is not so strong. This has never been an easy-to-measure behavior, but there are histories of early deprivation, and there are pessimistic expectations of need satisfaction, and there are distrustful attitudes. Jones' report of the difficulty problem drinking women had in forming adolescent relationships is supportive. She describes the women: ". . . their behavior would seem to present obstacles to interpersonal associations since they are judged to be sensitive to criticism, judgmental, distrustful, hostile . . . ."

I have also suggested (1974) that this pre-alcoholic pattern of behavior may relate to women's behavior in treatment. It is difficult to make a judgment but the greater tendency of women to go in and out of treatment may relate to lack of trust. It may also relate, however, to the realities of therapists' attitudes toward women alcoholics!

Low Self-Esteem. Jones describes the self-negating behavior of problem drinking women, but as is true with most of our findings, it describes the women *after* they become alcoholic. Clarke (1974) did not find differences between men and women alcoholics on a Q-sort measuring self-esteem. McLachlan et al. (1976) compared 100 women alcoholics with 100 control women on a social competence scale and found the alcoholic women to have lower estimates of themselves and to be less satisfied with themselves. All these studies involved women who were already problem drinkers. I am inclined to believe from comparison of psychiatric data in a variety of disorders that women patients dislike themselves more than do men patients, but I do not see how that is distinctive among women alcoholics.

Impulse Control Problems. Alcoholism is defined by psychoanalysts as an impulse disorder. Again, this is not a behavior pattern we have measured successfully. In clinical work, we speak of difficulties in impulse control when the child engages in acting out behaviors: enuresis, temper tantrums, antisocial acts. These difficulties are manifested much more by boys than by girls in the early years. We have suggestive evidence from Zucker's work that these impulse control problems may precede the development of alcoholism, but Jones' description of "unstable, unpredictable impulsivity" describes men and women problem drinkers after they became problem drinkers. Might this issue not be mixed up with what are considered masculine/ feminine behaviors, acceptable or deviant?

Anger. From the clinical point of view, alcoholic drinking may be viewed as one expression of anger toward the self and toward

others. Therapists often describe alcoholic women in treatment as "angry." But what do we know of these women before they became alcoholic? Were they angry, but denying such feelings with a cover of compliance and submissiveness? Were their angry feelings frightening and incapable of expression? The fact is that we have virtually no data at all on this point. I think that anger, hostility, and the handling of aggressive feelings may be critical issues in understanding how alcoholism develops, but I cannot offer any experimental or research evidence on this point.

Sex Role Conflict. Wilsnack's work demonstrates both the function of alcohol as producing increased "feelings of womanliness" (1972) and the feminine/masculine contradictions of alcoholic women's response to certain tests (1973). There seems to be more solid research support for this particular etiological factor, but there are a number of issues to be dealt with:

- *Ambiguity of Role.* Women are socialized within the family and the larger society to acquire a feminine identity, a feminine sex role, but this role is (and I think, always has been) more ambiguous and less clearly defined than the male role. In some periods and places, women participate in heavy work outside the home. The Victorian concept of the fragile female is recent and did not extend to the lower classes. And the question of female role—what does a wife do? how much mothering is good? what are effects on family and self of working outside the home?—is one we have been thrashing around with since the century began. Two queries: Are ambiguity and conflict greater now than ever before? And do such ambiguity and conflict affect prealcoholic women more than others?
- *Definitions.* What is masculinity and what is femininity? What is androgyny? The definition of these concepts is difficult and the people who did pioneering work like Horner or Bem opened a series of questions; they did not resolve them.
- *The Old Independence-Dependence Issue in Alcoholism.* This has been argued for years about male alcoholism. I have argued myself that it is not dependency needs per se which distinguish male alcoholics but a very high intensity of conflict about such needs. Is this high degree of conflict the distinguishing characteristic of both male and female alcoholics? Both express such conflict: men behaving in very macho, hypermasculine ways while adolescent, and women in adolescent hyperfemininity. I have found great differ-

ences between men who become alcoholic in their twenties and are still acting out their adolescent machismo and older male alcoholics who seem more passive, tired, and depressed although still angry (Veterans Administration Hospital study, n.d.). Is alcoholism a form of assertive, angry behavior for women? Are they expressing the high degree of conflict which results from the combination of compliant hyperfemininity and covert anger? Are the women who were aggressive, impulsive adolescents then not disturbed by a high degree of conflict?

- *Conflict.* Some early experimental work by Neal, Miller, Conger and others (with animals) indicated that there was a relationship between conflict and alcohol. Experimental results were interpreted as showing alcohol to have removed fear in the approach-avoidance paradigm:

  > . . . alcohol seems to produce a temporary direct reduction in fear and conflict and hence in misery (Dollard and Miller 1950).

  Although review of the tension-reduction hypothesis shows equivocal findings (Cappell and Herman 1972), the findings about the effects of alcohol on fear and on approach-avoidance *have* held up. What I am suggesting here is that severe conflict itself is the antecedent and we should be exploring the pre-alcoholic lives of our problem drinkers not only for sex role conflict but also for all sorts of conflict and habitual response to conflict.

Frustration Tolerance. Low frustration or stress tolerance was a significant issue in discussing male alcoholism but has been raised very little in connection with women problem drinkers. In 1952, the World Health Organization's committee on alcoholism said, without specifying sex, that alcoholics ". . . present a large variety of personality types which have a few traits in common, in particular a low capacity for coping with tensions . . . ." Is this true? Is it true of women who become alcoholics? Methodological problems in this area are not all that difficult. Several years ago, Coopersmith wrote a series of papers which promised some experimental support (1964, 1967). The papers did not deal with sex differences nor did they deal with the question of whether low frustration tolerance predated the development of alcoholism or was consequential.

Somatic Concerns of Women and Attitude Toward Medication. Although I do not believe that anatomy is destiny, it would appear that women, for either biological or social reasons, are different

316-863 O - 80 - 8

from men in body concern and attitude toward medication. I believe that women are socialized to seek solutions-in-medication more than are men. A survey suggests that, starting with age 15, female rates of use of nonprescribed medicines, particularly over-the-counter pain relievers, are higher than males (Bush and Rabin 1976). This levels out after age 45. In several surveys of adult substance use, women proved to be bigger users of medically prescribed and over-the-counter drugs. Cooperstock has demonstrated the greater likelihood of a woman leaving the doctor's office with a psychoactive drug prescription. I submit that women seek out solutions-in-medication more than do men, and that medical practice encourages this tendency. It is for this reason that polydrug abuse appears more often among alcoholic women than men. It is also true of women who are not alcoholics.

Many studies of problem drinkers observe that women alcoholics tend to use alcohol medicinally, whereas males use it recreationally and socially, so that the pathways from normal drinking to alcoholism may be different. And, finally, related to somatic concerns is the recurrent finding that the problems most often cited by women in surveys of problems relating to alcohol consumption are health problems. This seems a fruitful area of research for people interested in socialization of women, medical services, and alcohol.

Other Diagnostic Features. Other diagnostic conditions are rarely diagnosed unless problem drinking brings the woman to the attention of a treatment facility or physician; other diagnostic conditions, when they are visible, may be diagnosed and the problem drinking ignored. Most commonly seen in association with alcoholism is clinical depression, often with a history of suicide attempts. Polydrug abuse is noted frequently. There appears to be an increased prevalence of alcoholism and suicide attempts among women homosexuals. And Pattison noted that of 50 alcoholic women studied, a large proportion (74 percent) were diagnosed as "hysterical personalities" and that "many of the reported symptoms antedated the development of alcoholism." He argues that women with severe hysterical character disorder may be highly vulnerable to alcoholism.

This review of some of the proposed components of psychological vulnerability leaves us impaled on the horns of an old dilemma. The criteria of what may be acceptable to the clinician are not the same as the scientific-experimental criteria which must satisfy the researcher. Most of the literature about alcoholism deals with (a) alcoholics who come to a facility and make themselves available as research subjects, (b) what the alcoholic can re-

port of past events, inevitably selectively, and (c) the biases of the researcher. Case reports are useful to the clinician and often have validity; they jibe with what the clinician sees. Nonetheless, the researcher is looking for generalizations, and each individual is unique.

Having expressed this problem, I will say that a good case can be made for most of the items discussed above. The high-risk factors, e.g., depression, sex role conflict, etc., do appear in the early histories of women who present a variety of psychological disorders. What decides that a depressed, frustrated woman will turn to alcohol? It is in looking for the answer to this question that psychosocial components of high risk become clear: If we have a high-risk group like children in alcoholic families, we look for psychological vulnerability to help us predict who will become alcoholic. If we have persons with a high degree of psychological vulnerability, we look to the social environment, the significant others, the models, and find that psychological vulnerability plus alcohol problems in a significant other are a very high-risk combination.

Risk Factors in Drinking Behavior

Drinking behavior is a good area for research on risk factors, because if we can see in drinking behavior certain distinctive signs, e.g., drinking heavily, drinking alone, drinking to escape problems, etc., which predict subsequent development of alcoholism, we have valuable information for prevention efforts. This is sometimes called "early casefinding," but we ask not only about early signs but about drinking behavior which appears even before we get into early signs of alcoholism.

Epidemiological Study

To summarize the Cahalan, Cisin, and Crossley (1969) findings: Approximately 21 percent of the men and 5 percent of the women surveyed were classified as heavy drinkers. Both sexes showed the highest proportion of heavy drinkers in the age group 45-49, but women also showed a peak in the age group 20-24. (It would be extremely important to study whether these tend to be the same women: Is heavy drinking in middle age foreshadowed by heavy drinking in young womanhood?) Heavy drinkers among women are found more often at lower status levels and in "operative" and "service work" occupations. Among women 20 to 60, escapist drinkers make up 3.5 percent of those who drink in the

higher ISP (index of social position) and 10 percent of those who drink in the lower ISP.

Two observations of Cahalan's (1970) are useful:

> The patterns of current problems also differ for men and women in that among men the prevalence of problems is highest for those in their twenties . . . . On the other hand, relatively few women in their twenties had drinking problems, with the bulk of problems being concentrated among those in their thirties and forties . . . men generally get introduced to heavier drinking by other men when they are young, and . . . women tend to get involved in any heavier drinking somewhat later in life, probably often through the influence of their husbands or men friends.

And the second point made by Cahalan is in connection with the 11 specific problems asked about in the interviews:

> None of the specific problems showed a high rate for women in excess of the 4 percent for health problems.

The significance of health problems as a trouble sign in surveys of drinking behavior surfaces again in the London suburb study (Edwards et al. 1972). The surveyers compare male:female ratios on the basis of several different drinking problems. When the problem is drunkenness arrests, the ratio is 14:1. When it is mental hospitalization, the ratio is 5:1. When it is liver cirrhosis, the male:female ratio becomes 1:1. Further, when the investigators look at trouble associated with drinking experienced in the last year, the troubles which show the highest percentage of women answering affirmatively are associated with what might be called health signs: shakiness in the morning and blackouts.

Surveys of high schools and colleges show that the age at which drinking begins is lower and that the percentage of junior and senior high school and college students who drink has risen. Extrapolating from her San Mateo figures, covering 1968 to 1974, Blackford looks into her "clouded crystal ball" and predicts a shrinking gap between rates of male and female problem drinkers although she believes that male rates will stay higher. She also makes the point that as female alcoholism becomes more acknowledged by women alcoholics, ". . . the overt demand for services for females will rise dramatically." Blackford is certainly aware of the gaps in the data, of the difficulty we have in linking the behavior of high school students using alcohol and drugs to future problematic use. She notes ". . . the different degrees of susceptibility" but argues that beginning to drink at an earlier age makes more likely larger number of problem drinkers and younger problem drinkers in the future. These assumptions, that earlier

drinking will make for larger numbers of problem drinkers and will start the drinking problems earlier, may be logical but they have yet to be proved. Drinking, and even drunkenness, do not an alcoholic make, but the surveys do justify prevention programs directed toward young people, particularly toward young women.

Survey information allows us to select target groups, i.e., those groups where the number of potential alcoholics may be greater. Survey information-gathering might be extended to the question of patterns of alcoholic consumption by adolescents and which patterns predict future difficulties.

Longitudinal Study

Filmore's followup of male and female college students who participated in the Straus and Bacon college drinking survey in 1954 indicates that "the problems at time I most predictive of drinking problems at time II were *some degree of intoxication* and *psychological dependence* among the women and symptomatic drinking, frequent intoxication and binge drinking among the men."

For college women then, getting drunk and getting to depend on alcohol for relief are predictors of future trouble.

Motivations for Drinking

There is very little information about the reasons why people drink, and yet the reasons people give tell us a great deal about how they view alcohol. Some research studies with college women have associated heavier drinking with low expectations of having needs met and sometimes with social participation with others who drink. Interestingly enough, when Konopka (1976) asked adolescent girls what their reasons were for taking drugs and alcohol, the most frequent responses were to escape from problems or peer pressure. Other reasons given were curiosity, pleasure, desire to be popular. Edwards, Hensman, and Peto (1973) studied the stated reasons for drinking given by women and men and found that social pressure to drink was a good predictor of trouble for women.

This suggests that a combination of using alcohol as an escape from problems plus belonging to a group which exercises pressure to drink, may be a high-risk combination. If, for example, women who are heavy/escape drinkers also have associates (spouses, friends, relatives, or clubs) where there is pressure to drink often and excessively, the likelihood is very great that they will develop into problem drinkers. Beckman has been studying the reasons

alcoholic women and others give for their drinking, and she reports that feelings of inadequacy and powerlessness as well as desire to escape from feelings of depression, loneliness, and anxiety characterize men and women alcoholics.

Stress Precipitants Cited by Alcoholic Women

In studies of alcoholic women, it is found repeatedly that if one asks about the circumstances of situations that marked the shift from prodromal to problematic drinking, women significantly more often than men cite a traumatic event. Not all alcoholic women pinpoint a stressor, but very many do. The stressor may be a divorce, rejection by a spouse or lover, abandonment, the death of someone close, or a hysterectomy, miscarriage, or related gynecological problem. A recent study (Mulford 1977) of clients in Iowa alcoholism treatment centers notes significant numbers of women reporting a stressful event or personal crisis as related to the onset of alcoholism. We know that most people experience occasional psychological discomfort and stress, but this finding suggests that if a physician knows his patients well, he should know that a traumatic experience may be a warning signal of future trouble ahead.

Early Signs of Difficulty Reported by Alcoholics

In a report comparing responses of men and women in an Alcoholics Anonymous group, James (1975) notes that women report as prodromal and early:

- personality changing when drinking
- drinking more before menstrual period
- being supersensitive
- feeling more capable when drinking
- finding unexplained bruises
- drinking before a new situation

These behaviors were not reported by men respondents.

In summing up, it would appear that norms have changed so that the percentage of adolescent girls now drinking is virtually equal to the percentage of adolescent boys drinking. It would seem that those who drink for reasons of escape from problems are more at risk. Peer pressure from heavy-drinking groups may also be a predictor of trouble. Early warning signs include at least two indicators: medical/health problems and a stressful event or personal crisis.

The Social Environment as a Risk Factor

We have already discussed something of the role of the family and significant others. Being a child in an alcoholic family and/or marrying an alcoholic man does seem to contribute to psychological vulnerability and at the same time increase the likelihood that such a psychologically vulnerable woman will become a problem drinker.

There are a great number of groups to which any person can belong, and these demographic groupings (sex, age, urban/rural, neighborhood, regional, ethnic, religious, etc.) will influence drinking behavior. There are drinking customs, attitudes, and behaviors in our society and in our smaller societal groups, and we tend to incorporate these customs. We have selected three social environment factors to mention and discuss briefly: the workplace and its role in drinking, minority group status, and the stresses of economic deprivation and social change.

The Workplace

This has been, and is, an area of uncertainty. There was a period when working inside the home was at issue and the home as workplace was considered an area of high risk for female alcoholism. Social scientists, but more usually journalists, wrote about suburban housewives, the fullness of middle class existence or working class existence for the woman at home. Since a large proportion of adult women do not work outside the home, inevitably a large proportion of female alcoholics will be women who work at home. That there are pressures at home in life as a housewife is not to be denied; there are several English and American studies which indicate that the woman who is lower class, nonwhite, separated or divorced, family breadwinner, and childrearer is at highest risk for mental illness. The woman at high risk for depression is described similarly (Guttentag et al. 1976). Good studies of the stresses which impinge at this stage of the lifecycle on women in different socioeconomic groups are needed. The pressures of multiple responsibilities of lower status women, who often cope with very little help from others, should be investigated. For middle-class women who work at home as housewives, mothers, and housekeepers, the anxieties, isolation, structuredness of work tasks, boredom and coping mechanisms should be investigated to determine which coping mechanisms work and which fail and produce depression and drinking.

Information about women who work outside the home, their work stresses, and drinking behavior, is minimal, but we may have more information before too long. We have had a number of autobiographies of highly visible women (Roth, Barrymore, Kent) but not very much about women who work as hourly or salaried employees. The development of employee assistance programs in many workplaces promises that there will be such data in the future. Again we have the problem of separating antecedent causes and pressures from the consequences; most of the reports we have had are of women who already had drinking problems. These include a comparison by Gerard and Saenger (1966) of housewives and employed women patients in the outpatient clinics they evaluated: They report twice as much improvement in the former (21 percent and 11 percent). Masi (1977) reports the impression of employee assistance program workers that women who have alcohol problems are more likely to use a variety of substances than the men. What confuses the picture is the fact that there is a very high proportion of separated/divorced women among those employed outside the home, so comparisons with housewives must be very cautious and tentative. The pressures on working women—economic pressures, responsibilities as heads-of-family (as they often are), conflicts and guilt over the wife/mother role—need investigation.

At this time, there is no answer to the question concerning which women are more likely to develop drinking problems, those who work inside the home or those who work outside the home. All we can say so far is that neither group seems immune to alcohol problems. The housewife who drinks at home actually does exist and so does the problem drinking working woman. We propose that investigation will show complex relationships between age, marital status, economic responsibilities, supportive networks, level of education and employment, and women's drinking patterns.

Minority Group Status: Black Women

Of all minority group women, most is probably known about the alcohol-related behavior of black women. There are more black women abstainers than there are white women abstainers (51 percent and 39 percent). This was reaffirmed recently in the Kaiser-Permanente studies: Health examination data show 25 percent of white women to be abstainers but almost 42 percent of black women do not drink at all (Klatsky et al. 1977).

But, of those who drink, a larger proportion of black women than white women are heavy drinkers (11 percent and 6 percent).

Even when controlled for education or employment status, black female rates of alcoholism are much higher than white female rates. The male:female rates of alcohol problems are about 2:1 to 3:2 for blacks and about 4:1 to 5:1 for whites. The reason for this is not clear. There is a "heavier responsibility as head of family" viewpoint, and there is a viewpoint that the statistics are explained by the fact that black women are frequently engaged in vulnerable occupations, such as service jobs.

What are risk factors for black women? We have one research study (Sterne and Pittman 1972) which makes some suggestions. Black women who were heavy drinkers, compared with other black women, did not differ on head-of-family status. But heavy drinkers were (a) less often from rural backgrounds, (b) less apt to be regular churchgoers or place high value on "respectability," (c) more apt to drink in public places and be permissive about men's drinking, (d) more likely to drink for escape reasons, and (e) more likely to have a heavy drinking family member at home and to do their own drinking with him/her. The striking thing about this list is the repetition of the same themes: The black woman who is a potential alcoholic engages in escape drinking and there is heavy/problematic drinking by a significant other in her family.

Stresses of Economic Deprivation and Social Changes

There is some suggestion in the epidemiological data that poverty may be an important stress in the development of problem drinking. Problematic drinking, of course, occurs among all social classes, and upper class women are more protected in the sense of less public visibility (Tamarin et al. 1971). But whenever we look at the statistics about lower income or poor people, we find that a smaller proportion of the women drink and that a larger proportion of those women are heavy drinkers and heavy escape drinkers. It suggests that for poor women, the choice narrows down to abstinence or heavy drinking.

The role of social change and the rapidity of social change in the development of alcohol problems is really a matter of speculation. There have been a number of statements, some in the alcohol literature, about the price for "emancipation" as being paid in higher rates of alcoholism among women. Third world countries, by and large, do seem to show changes: as industrialization and urbanization progress and as a middle class arises, there also seems to be a tendency for women to drink, to drink more, to drink openly. But all of this speculation about social change is guessing. It is my private belief that women pay a higher price for social

change than do men, but that really is an opinion, and relating it to changes in drinking behavior is a real challenge.

Summary

1. Antecedents which are physiological/genetic in nature have not been clearly linked to the development of problem drinking in women. A relationship exists between blood alcohol level and menstrual cycle phase, but we not know how this relationship links to problematic drinking. The incidence of gynecological-obstetrical difficulties is reportedly high among alcoholic women, but it is unclear whether these precede the drinking or are consequential. The relationship between age at onset, hormonal status, and liver cirrhosis should be investigated among women problem drinkers.

2. There is more disruption in early family history among women than among men alcoholics. Since this is also true of other deviant women, it suggests a heightened vulnerability to psychological disorder. The woman alcoholic as adolescent has been described as depressed, distrustful, and self-negating. Some appear to be overtly rebellious and have impulse-control problems; other appear to be overtly compliant. Conflict, often focused on sex role definition, seems to be a frequent antecedent of problem drinking.

3. Drinking behavior and conditions which seem antecedent to problems include heavy/escape drinking and peer pressure for heavy drinking. Indicators of potential trouble seem to be a traumatic life event or personal crisis which acts as stressor and early medical/health problems resulting from alcohol consumption.

4. Social phenomena which seem highly associated with the development of female drinking problems include alcoholism in a significant other—this may be modeling (past) or it may include drinking together (present). Socialization which encourages use of substances as medicine produces a use of alcohol as medicine.

5. We do not know whether women at home or women working outside the home are at greater risk for problem drinking. Being black or poor seems to narrow the range of choices; more black and lower income women are abstainers and a higher proportion of drinkers in that population are heavy drinkers than is true of the middle class. With black women as with white, heavy drinking is associated with escape drinking and a family member who is also a heavy drinker and a drinking companion.

6. It adds up to this: Any risk factor taken by itself (except perhaps, a risk factor related to drinking behavior) does not really distinguish women problem drinkers from women with other kinds of problems. It is the sum effect of childhood deprivations, stormy adolescence, lack of trust, sex role conflict, low frustration tolerance, a view of alcohol as medication and method of escape from problems, and the presence of a heavy/problem drinker in the family—all are the risk factors related to women's alcohol problems.

Research Recommendations

1. *Longitudinal studies.* Research begun when subjects are young children, followed through childhood and adolescence and into adulthood with measurements of many sorts: physiological, interviews, tests, sociometry, etc.
2. *Experimental study of drinking.* In small groups, study effects of alcohol on conflict, and on frustration tolerance.
3. *Definition of female problem drinkers.* Who is a problem drinker? Women who become intoxicated frequently? Who drink alone? Who have health problems because of their drinking? Who get quarrelsome when intoxicated? Proposed here are studies of small groups (social clubs, residence halls) where member-participants know each other and where alcohol-related behavior can be studied as perceived and defined by members of the group.
4. *Studies of contexts/settings of drinking.* What are the occasions when women drink and with whom, where, and how much? Is getting intoxicated with a friend a rite of passage for girls as well as boys? Is heavier drinking among younger persons associated with sexual activity?
5. *Studies of alcoholic women who are divided into groups for comparison.* By age at onset, or classified as essential-reactive, primary-secondary or by accompanying diagnoses.
6. *Research into patterns of adolescent activity.* Includes drinking behavior, smoking behavior, sexual activity and their perceptions of adult authority, and attitudes toward parents and teachers.
7. *Women who work outside the home.* A comparison of blue-collar and white-collar women and their work-related drinking patterns.

Appendix

Women With Alcohol Problems: History of Disruption in Family of Origin

Loss/parent absent

1958	Rosenbaum	40%	
1964	de Lint	37%	Male alcoholics: 13%
1966	Kinsey	72%	

Parent absent or psychiatrically ill

1968	Winokur & Clayton	39%	Male alcoholics: 22%

Alcoholism/problem drinking if family of origin

1937				
Wall	68%		Male alcoholics: 44.9%	
1955				
Sherfey	44%	parents	Male alcoholics: 35%	Prison women: 51%
1957				
Lisansky	24%	siblings	Male alcoholics: 9%	Prison women: 19%
1958	Rosenbaum	40%	(fathers)	
1964	Wood & Duffy	51%	(fathers)	
1966	Johnson et al.	34%	(father); 31%	siblings
1966	Kinsey	34%	(fathers)	
1968	Winokur & Clayton	40%	parents	Male alcoholics: 24%
1971	Jacob & Lavoie	42%	parents	
		42%	siblings	
1971	Rathod & Thomson	60%	parents	
1972	Jones (RW)	30%	relative	Male alcoholics: 23%
1975	Hoffman & Noem	26%	(fathers)	Male alcoholics: 24%
		6%	(mothers)	Male alcoholics: 5%
1976	Browne-Mayers, et al.	50%	("family history positive")	

Discussion Summary

Discussion Leaders: Violet Franks, M.D.
Jacqueline Wiseman, Ph.D.

Dr. Wiseman presented the following prepared comments:

I was impressed with the excellence of Dr. Gomberg's review of the literature on "Risk Factors Related to Alcohol Problems Among Women," as well as her critique of the work so far and her suggestions for further research at the conclusion of her presentation. I was also impressed with two other facts —

1. The paucity of research focused on the woman alcoholic. Like Gertrude Stein's remark about Oakland as compared to San Francisco—"There is no there there"—women simply are not *there.* In many cases, the research was not designed for women.
2. More important, despite the earnest research that has gone into correlating and controlling variables to get at antecedents of alcoholism, we know very little more than we did 20 or 30 years ago.

I shall set the first (but very vital) question to one side for the time being, while I deal with the second problem.

While waiting in the lobby for my turn to be called to dinner, I was asked by a woman how I happened to be here on Jekyll Island. I told her I was here for a conference concerned with research on alcoholism and women. She told me that I should see a film, by Msgr. Fulton Sheen on alcoholism, in which he pointed out that all the alcoholics he knew were very bright, sensitive, and felt unappreciated. She said, "See that film. There's your answer." I replied that the problem was more complicated than that. She said, "No, it was quite clear. Bright, sensitive, unappreciated people become alcoholics."

Although this may seem simple minded to us, it is in many ways no more simple minded than the one- or two-variable research of the past that Dr. Gomberg reviewed. (After all, it has three variables.)

I feel it is time we assessed this approach, because:

- The mystery of alcoholism proneness and vulnerability is not going to yield to investigation of one or two or three broadly stroked variables. (Often these are so broad as to be something that we have all experienced from time to time in our lives.)
- There is a great deal of uncertainty as to whether the variables under study are actually antecedent (thus reflecting vulnerability), inasmuch as most studies start with alcoholism as established, rather than following its development longitudinally.
- Most important, one does not get a feeling for the variables as they are operationalized in the real world (not on a scale). That is, exactly what is a case of stress that cannot be handled versus one that can? What constitutes a true case of low self-esteem — and what does not?
- As one looks over the array of variables identified in the review which might be associated with vulnerability to female alcoholism, one does not get any feel for where they fit into the total picture.

I'd like to suggest something fairly radical . . . . I suggest that this approach has led us to a dead end and that we drop variable correlation for awhile as a major approach to unravelling causation.

We need to remember that variables do not interact — people do. We need to look once again to motivation among people — the alcoholic and significant others as they interact.

No one is born an alcoholic — despite the general acceptance of a disease model of alcoholism. There is an element of voluntarism in the process of becoming an alcoholic, and it is this process, which at least starts with voluntary acts, which deserves our attention. I do not think we give motivation enough credence in our research on the development of alcoholism, although we do in many approaches to treatment. (We speak of "motivation" to get better, etc., and the uselessness of any treatment program without this motivation.)

At present we carry around with us two models of motivation — that which we use as scientists as we study others and that which we use to refer to ourselves.

- If asked as scientists what makes people behave as they do, we say "Well, I shall look into their demographic backgrounds, age, sex, race, religion, education, social class, etc., and perhaps into their genetic makeup and their tolerance for tension, their sexual conflict, their dependence, or independence . . . ."

- If we are asked why we act as we do, we are likely to answer "Well, I thought it over, and since I had had some previous experience with something like this, and since there were the following alternatives, I decided to do as follows . . . ." In other words, we allow ourselves, but not our subjects, strategic moves.

I would like to see us do more on a research level with the second model of motivation.

I think that the tests and measurements at this stage of the game do not do justice to the total person or the total experience. I do not trust our instruments. I would hold that approach until we have operationalized the concepts of the woman alcoholic, as she lives her life, in much more detail than is presently the case. We need concepts that are (1) reflective of actual action and (2) situationally grounded. All action takes place in situations — not in a vacuum. We may feel less feminine in certain situations than in others; depressed by certain situations and not others. Until that type of refinement is made in our concepts, we will not get at the heart of motivation.

What will this type of research into possible vulnerability look like? First, we need to find the pushes and pulls of the situation of drinking and determine how these are balanced by the average woman and why this balance changes over time. This suggests a career model of investigation — the longitudinal research mentioned by Dr. Gomberg. Further, it suggests not a search for Cause → Effect, but for C → E → C → E → C → E and so on. (As Dr. Wolin said, consequence becomes cause. Effect becomes the antecedent variable.)

Second, we need to do more work on the deviant cases — to explain why women under what appear to be equivalent pushes to drink manage *not* to become alcoholics. We need to consider what are the alternative reactions to these various kinds of stresses — and why.

This career model would be a sort of flow-chart model with numerous branches or turning points (not unlike the study of the turning points of falling in love). Several discovery possibilities emerge from such a model:

- The turning or branch points discovered may provide us with the preventive ammunition we now seek. (That is, there may be more than one place to stem the development of alcoholism.)
- Certain paths may lead to a phenomenon which Erving Goffman has aptly named "in-deeperism" — in which it becomes easier to decide to continue to drink (with all its

concomitant troubles) than to start to abstain. It would be good to know this juncture if such exists.

- A good deal of the earlier alcoholism literature (still found in AA literature) contains the idea of hitting "bottom." Is bottom for women different from bottom for men? How does it differ from the feeling that one has so burned one's bridges that there is no return?
- Not to be overlooked in this career model with branches is "the road back." How do women react to the various treatments they receive? What obstacles do they perceive to their achieving and continuing sobriety?

This career approach is not to be confused with a multifactor model. It is not so much an elementary search for factors as a holistic, or gestalt, search for clusters of constructs as they mutate through time.

It seems obvious that the research approach suggested here focuses on the viewpoint of the alcoholic woman herself, rather than on the viewpoint of outside investigators or clinicians working with her problem. (This is obviously a great need in the area of research on women.) Thus, it calls for a data-gathering approach different from that suggested by earlier researchers reviewed by Dr. Gomberg. The approach learns the life variables from the subjects instead of superimposing them on the subjects. It must be *unstructured* and *qualitative* — at least for the initial efforts — because if we structure the variables prematurely, we limit discovery.

Observation, participant observation, and depth interviewing are the techniques best suited to gathering data when you admit you really know very little about the phenomenon you wish to study, and you want to see developmental processes from the viewpoint of the subject:

- Observation allows the researcher to see the behavior as it occurs — with all its nuances — in an actual situation.
- Participant observation, when properly done, helps the researcher to know how the subject feels in these situations, to empathize with the subjects.
- Depth interviewing gets at all the material not available when observing — the thoughts, fears, considerations, review of past history, the definition of the situation that leads to a decision.
- It can also substitute (to some extent) for longitudinal research by the collection of retrospective data (although there are limitations here, as we are all aware).

It is these approaches that will allow us to "get under the skin" of women alcoholics as Dr. Fillmore so aptly suggested and Dr. Wolin seconded. We might also get material that would improve our scales and measurements and improve our control groups.

Controls are a special problem. What do we control? We usually pick some standard demographic characteristics (e.g., lower class, nonwhite, separated or divorced), then tell ourselves other factors will "cancel out." Actually, we shouldn't use controls until we know the possible array of significant factors. They may be very different from these demographic variables. For example:

- Popular in high school versus not popular;
- Pretty versus homely;
- High IQ versus low IQ;
- Career woman versus working woman versus club woman;
- Shy versus aggressive;
- Prudish versus promiscuous;
- Had children while young or old;
- Works with husband's encouragement or without;
- Sexually satisfied or dissatisfied; and
- Gets along with neighbors or does not.

From these approaches, we might learn something about:

- Early or first drinking experiences — by watching young persons at their first parties where alcohol is served;
- The meaning drinking has for the alcoholic — what they see as normal drinking by asking them or interacting with them.
- The part played by significant others in the development of drinking: How sanctioned, by whom, to what effect? How encouraged, by whom, to what effect?
- The part played by first and succeeding interventionists; whether they make drinking problems better or worse.

A valuable subject for research is the spouse of the alcoholic. Studies in Finland and America have focused on wives of alcoholics; we have carried out a pilot study on husbands of alcoholics. Such studies might begin to explain how it is that fewer women are in treatment, and that they appear "sicker" than their male counterparts.

Spouses are often the first line of defense against alcoholism. They are the first to notice and try to stop problem drinking;

316-863 O - 80 - 9

the first to try to get the problem drinker into treatment. However, great differences are found between husbands and wives. (See table 1.)

Table 1. Comparison of Behavior of Wives and Husbands of Alcoholics

Wives of alcoholics	Husbands of alcoholics
1. Wife notices symptoms of alcoholism early. Does not go by official symptoms like morning drinking and blackouts but by antisocial behavior, such as: • Stays out all night • Stops taking wife out • Is rough during intercourse • Starts drinking at work	1. Husband notices much later: • Usually goes by official symptoms (often claims to know them because he is a former alcoholic himself) • Sometimes had to be told by friends (wife never had to be) • Only became really upset when wife started letting down on child care, housework, etc. • May have noticed because wife embarrassed him in front of guests, etc.
2. Wife starts immediate campaign to get husband to stop drinking. Tries: • Logical discussion • Tears and persuasion • Nagging • Threats	2. Husband does nothing. Usually knows AA credo. Believes he can do nothing to help her stop drinking — that it is up to her to want to stop.
3. Wife tries very hard to get husband into professional treatment. Often threatens to leave if he does not go. He often goes because he is so sick (physically).	3. Husband does not urge wife to go into professional treatment as soon or as strongly. • Worries about the cost (not covered by insurance) • Say that she doesn't like to leave home (a few suggest that she might try weekend treatment) • Is afraid that she will meet some other man and be unfaithful if the institution takes both male and female patients
4. Wife stays with husband through entire treatment: • Many for financial reasons — whether real or imagined • AA for the insurance • For love	4. Husband leaves wife after she slips once or twice after being institutionalized; looks for another woman (often looks while still married).
5. Wife drives husband to detoxification; picks him up.	5. Husband often refuses to drive wife to detoxification center; social worker has to call and beg him to come get her.

I believe that this type of detail must be developed before we go any further with scales, surveys, multivariate analysis, and controls. It is time to ground our concepts and theories in the reality of the drinking woman's situation as she sees it, and as persons in counter roles see her and themselves and react to her.

Then we can move beyond the somewhat simplistic explanations of the past and perhaps locate points of intervention and prevention along what must be a very extended and complicated road to alcoholism.

* * * *

Dr. Franks led the discussion of issues raised by Dr. Gomberg and Dr. Wiseman. Dr. Gomberg talked about the search for an "equation of prediction" which would consider genetics, early history, learned patterns of behavior, escape drinking, and alcoholism in significant others, and their contribution to increasing the likelihood of female alcohol problems. Dr. Wiseman stressed that there are different pathways to alcoholism, which can be studied in different ways and may initially be approached best through an anthropological case-study technique rather than a survey technique. Further discussion centered around the following topics:

The importance of sex role conflict — This subject, which was discussed extensively in an evening session, was considered of great importance in investigating vulnerability to alcohol problems. Dr. Gomberg suggested the need to reexamine, redefine, and, in some instances, throw out old definitions of masculinity and femininity, and substitute coping skills and competence in specified situations. Sex role standards change and vary by group; no single set of standards can be said to apply to all American women. Special vulnerability was suggested for women who have overbought traditional roles of helplessness and are very angry because these roles have not worked for them. Such role conflict is not necessarily unconscious; women may be well aware of their anger and resentment of its source.

Men, too, have sex role conflicts, and these might be studied along with those of women in relation to alcohol and other drug use. Overbuying of traditional masculine roles can cause problems for many men. The effects of modern role proliferation should also be investigated for both sexes. It is particularly important to consider various demographic variables such as socioeconomic and marital status because of differences in sex roles as perceived by different subgroups. Today's roles may not fit social stereotypes.

Other variables important in investigating vulnerability: Several

variables and special populations which might be studied in relation to vulnerability were suggested. Never-married women, older women, and female prison inmates might usefully be studied. The importance of self-esteem should also be investigated. Dr. Wolin described research suggesting that people who cannot recover from self-esteem injuries are at high risk for alcoholism. Environmental factors may also affect vulnerability.

Methodological needs: Participants stressed the value of longitudinal studies as a means of gaining lifecycle information about populations. A particularly important age group for study is young adults between college age and 30, since this is a period when many very important developmental experiences occur which tend to structure later life, e.g., early job experiences, marriage, the birth of children. Comparisons between men and women in this age group were recommended, as well as efforts to mesh survey results with data from other kinds of studies and to compare data on particular subpopulations. Such studies would help describe the many different pathways to alcoholism and thus suggest factors which may eventually predict alcoholism.

Ethical issues: Researchers studying individuals or families with alcohol problems face certain ethical difficulties. There is always a concern when a researcher observes problems but does not intervene. Human subjects committees at many universities and other institutions deal with this problem frequently. Appropriate researcher procedures were suggested and discussed. Some researchers make a list of referral sources for counseling and treatment available to respondents. This may be considered undesirable when the researcher does not know the quality of the programs, or feels that they are not likely to be helpful. One participant stressed the importance of training interviewers who are not therapists not to give advice required by respondents, since they are not qualified to do so. Some treatment-oriented researchers may wish to encourage those with alcohol problems to enter treatment, thus actively intervening with some respondents. When a researcher does intervene, this becomes part of the data. The importance of clearly defining the role of the researcher was emphasized. Respondents and the community should understand when the researcher will be observing, when participating; this should be clear in the study design and should be stated very specifically to respondents. The need is to retain objectivity while doing nothing which may harm a respondent.

Alcohol Use and Problems and Women's Roles: Discussion

Discussion Leader: Linda Beckman, Ph.D.

A small group session was held to discuss alcohol use and problems and women's roles. Dr. Beckman presented some findings of a study that she conducted in which she tried to determine the relationship between sex role conflict and problem drinking. She found that alcoholic women did not differ significantly from nonalcoholic women in terms of conscious or unconscious masculinity or femininity based on traditional personality scales. Alcoholic women did show more role conflict and were slightly more unconsciously masculine, but only one-quarter of the alcoholic women studied showed this pattern, and Dr. Beckman questioned the significance of these findings. When she looked at the findings in terms of androgyny, Dr. Beckman found that the alcoholic women were undifferentiated; that is, they scored low in both masculinity and femininity traits.

The discussion was opened to the group and centered on the relationship between changing sex roles and drinking patterns. The following points were raised:

Multiple Roles. The question of whether multiple roles are unhealthy for women arose. If multiple roles cause greater stress, they could be a cause for alcoholism. However, it is possible that women can be more satisfied in multiple roles and, therefore, multiple roles are beneficial. Some studies were cited which indicated that women who are married and employed outside the home are more likely to acquire drinking problems. It was also noted that women who are highly educated or in the upper-or upper-middle socioeconomic classes are more likely to have alcohol-related problems. Studies currently show that employed women are more likely to have drinking problems than are women who stay at home, but these findings are questionable because there is evidence that women drinking at home hide their problem better or are protected and their problem is hidden by their families.

Role Conflict. If internal role conflict can be defined as role preference (conscious masculinity and femininity) versus success

in that role (sex-role style or behavior), then sex role conflict is really a more general phenomenon of the difference between the perceived and the ideal self. The question of expectations of one's self or of others being the basis of sex role conflict was discussed in terms of causing drinking problems. It was also noted that it is difficult to determine whether alcoholism is the antecedent/cause of sex role conflict or the consequence.

Masculinity/Femininity. Discussion of the validity of the existing masculinity and femininity scales and the problem of definition stressed the need for new measures and new terms. Drinking may have a symbolic value as a masculine, assertive, independent behavior. As roles change and women attempt to assume masculine roles, drinking increases.

The following research recommendations emerged from the discussion:

- Validate existing masculine and feminine personality trait scales.
- Research ways to test sex-role conflict and conflict resolution procedures in order to determine means for alleviating alcoholism.
- Study and define sex-role conflict in terms of the changing roles of women and men.

Research Issues and Recommendations

Work Session Coordinator: Marian Sandmaier

1. NIAAA should designate a resource person to encourage female alcoholism project design. This person should be a female researcher knowledgeable in the field and familiar with potential consultants in all relevant disciplines. Her responsibilities would consist in part of encouraging interaction among researchers and increasing the sensitivity of researchers in the alcoholism field to issues relating to women.
2. All materials sent out by NIAAA to prospective researchers in all fields should include a section which encourages the researcher to consider the implications of the prospective study for women. In addition, the name of the resource person should be included in all materials.
3. A methodologist knowledgeable in qualitative research should be added to the NIAAA grant applications review board.
4. NIAAA should require that in all research supported by Federal alcoholism funds, the title of the project and all papers and presentations thereon specify whether the research concerns all male subjects, all female subjects, or a mixed group, reserving the generic terms "alcoholism" and "alcoholics" to those studies which include both sexes.
5. NIAAA should encourage the coordination of research and treatment efforts by (1) combining certain research and treatment proposals into single projects and (2) linking more closely the findings of etiological studies with treatment efforts. In both cases, we are suggesting that research data be operationalized into treatment programing as a means of testing the validity of data gathered and effectiveness of treatment program design.
6. In reviewing prospective research grants related to women and alcohol, NIAAA should encourage, where appropriate, the use of control groups other than, and in addition to,

groups of male drinkers. Specifically, control groups should include normal women and women in treatment for alcoholism and other emotional or behaviorial problems.

7. Longitudinal studies should be promoted. Carefully selected cohort groups and their controls should be sampled over time to better illustrate process and change, for factors critical to specific female populations.
8. Inasmuch as it is recognized that becoming alcoholic is a fairly long and complex process, we recommend that NIAAA encourage researchers to utilize a "career" or "process" approach in research design dealing with etiology and risk factors in specific sociocultural contexts.
9. NIAAA should study differences and similarities in women of various subgroups. Subgroups include those based on:
   - Age (life stages)
   - Socioeconomic class
   - Minority group membership
   - Marital status (including never-married)
   - Sexual preference (lesbians)
   - Employment (women inside and outside the home and in different types of employment such as blue-collar jobs, professional jobs, etc.)
   - Incarcerated women
   - Women with other psychiatric or behavioral conditions or problems
10. We strongly support research which examines sex-role influences on women's drinking and drinking problems; in particular, research employing new, nonsexist ways of conceptualizing and measuring sex-role influences.
11. Studies should be conducted on marriages in which the focus is on the drinking patterns of the *female* in order to evaluate risk factors for female drinking problems within marriage. This could include studies of the husbands and marriages of problem drinking women.
12. Research drinking contexts and context-related drinking behavior in women (for example, drinking in small groups, rite of passage drinking throughout the lifecycle, association of drinking with sexual activity, etc.).

IV. Clinical Research: Casefinding, Diagnosis, Treatment, and Rehabilitation

Introduction: Researches on Women and Alcohol

Sheila B. Blume, M.D.

In the early days of Ancient Rome, the drinking of alcohol by women was strictly forbidden. Instances are recorded of death by stoning or starvation as penalty for women who had drunk wine (McKinlay 1959), so strongly has human society felt, at one time and place, about women drinking. Although our own society continues to have strong feelings on this subject, these feelings have not as yet been translated into a significant commitment to the study of women and alcohol. Thus Carpenter and Armenti (1972) wrote, "A question of considerable interest ought to be the effect of alcohol on female sexual behavior. Most experts comment on human sexual behavior and alcohol as though only males drink and have sexual interest"; and again, in pointing out the limited applicability of animal studies to the understanding of human sexual behavior, "The experiments bear only on the behavior of the male; nothing is known from them about the female, that great invisible half of the animal kingdom, to judge by experiments on alcohol."

Nowhere has this lack of emphasis been more sadly evident than in the area of clinical alcohol research. Keeping in mind Bacon's analysis of the multiple meanings of the word "research" (Bacon 1976), I shall use the term in a broad sense and speak of "researches."

Why Researches on Alcoholism in Women?

Before going further, it is fair to ask why a conference like this should be held. Is there any justification for special emphasis, funding, and effort to be devoted to the study of this particular subject?

First of all, males and females differ. On the physical level, it becomes increasingly clear that the classical physiological literature on drinking and the effects of alcohol on humans, done chiefly on men, cannot simply be assumed to apply equally to women. Jones and Jones (1976) found significant differences in blood alcohol levels, variability of peak levels, and metabolic rates of alcohol in women as compared with men given alcohol in the same grams-per-kilogram dose. On the behavioral level, Tracey and Nathan (1976) studied four alcoholic women in a closed-ward experimental drinking program and found their patterns differed from those of men tested in the same situation. Even in animal studies, sex differences are apparent. Fitz-Gerald (1972) states that male chimpanzees in a free-drinking experiment drank consistently more alcohol than females, corrected for age and body weight. Fifty-four percent of a group of males, but only 25 percent of females, drank until they showed overt signs of intoxication at least once during the study. In some strains of rats and hamsters, males drink more, whereas alcohol consumption in mice varies across strains (Meyers and Veale 1972).

Sociological studies are affected by sex differences no less than are physical and behavioral ones. Knupfer and Room (1976), in a study of drinking patterns and attitudes, wrote "In view of the known great divergence in drinking practices between the sexes in the general population, and of the evidence of wide variation between cultures in relative prevalence of drinking among men and women, it seems essential to control for sex differences in ethnic groups."

Second, although this difference exists, the number of women who are identified as "heavy drinkers," "problem drinkers," or "alcoholics" available as study populations is smaller than the corresponding populations of men. Therefore, in many published studies and reviews the data on women are simply left out because of the paucity of literature (Paolino and McCrady 1977), thrown out because of smaller numbers involved (Armor, Polich, and Stambul 1976), or not collected at all because of the difficulties involved. As Hyman states, "They change their names at marriage, and divorce and remarriage are more prevalent among women alcoholics than among men; fewer women drive cars, and fewer of them are therefore listed with the State Motor Vehicle Bureau; their telephone numbers are likely to be listed under their husbands' names. All of these factors compound the problems of locatability" (Hyman 1976). (This exclusion of women did not, however, deter Hyman from entitling his paper "Alcoholics 15 Years Later.")

Third, studies of women may be less conclusive than similar studies of men because of smaller numbers. An example is the study of Goodwin et al. on alcoholism in Danish adoptees (1977).

Fourth, the shortage of studies on the female results in treatment-related and other practical decisions being made on the basis of researches on very small numbers of subjects. For example, the only longitudinal personality study on drinking in women in the literature, the findings of which are widely quoted and utilized, included only three problem drinkers, if I understand the author's tables correctly (Jones 1971).

Considering the above factors, it becomes obvious that we need to know more about women and alcohol. But if we are going to know, it will only be through special efforts, emphasis and funding, because it is just plain easier to get data on men.

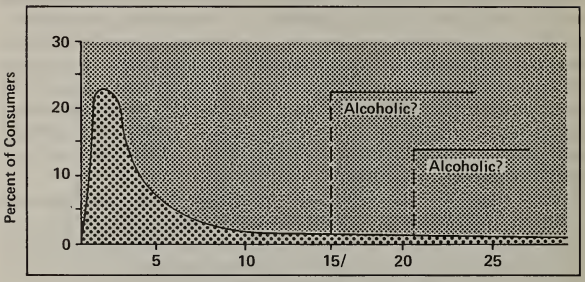
Review of the Current Status of Clinical Research on Women and Alcohol

In the preparation of this paper, I have come across many excellent reviews and comments on the literature to date. In alphabetical order they include Badiet (1976), Beckman (1975, 1976), Corrigan (1974), Davies-Osterkamp (1975, 1976), Fraser (1974), Gomberg (1975, 1976, 1977), Homiller, who includes an excellent guide for establishing outreach and treatment programs (1977), Kintner (1975), Lindbeck (1972, 1975), Lisansky (1958), Robinson (1976), Schuckit (1972), and two with no recorded author (*Women and Alcohol*, 1974; *Alcoholism and Women*, 1974). Many of these reviews offer syntheses of research findings, critiques of methods, and suggestions for future researches which are incorporated into the present paper.

Diagnosis

Quantity and Frequency of Drinking. There have been many approaches to the problem of defining and diagnosing alcoholism. One approach has been based on quantity and frequency of alcohol intake. An example of the quandary posed by such definitions is illustrated by figure 1 (De Lint and Schmidt 1976). This figure shows the so-called Lederman curve of distribution of alcohol consumption and possible cutoffs based on the average alcohol consumption of alcoholics in treatment.

FIGURE 1 — Frequency Distribution of Alcohol Consumption ($\bar{c}$ = 151)



Moon (1976) presented a similar curve in his report on alcoholism in Australia in 1975, using a cutoff alcohol consumption of 100 ml. (80 grams) daily in his definition of "hazardous drinking."

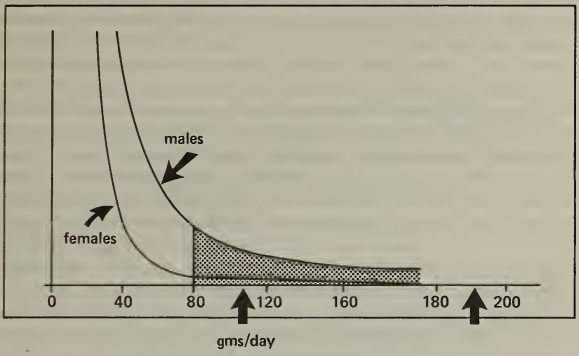
Notice in figure 2 that the curves for men and women differ markedly, but his cutoff point is the same.

We know from such diverse sources as the Stanford University 18-month followup data presented in the RAND report (Armor et al. 1976) and the behavioral study of Tracey and Nathan (1976), that male alcoholics drink nearly twice as much as comparable populations of alcoholic women. Converting Stanford's figures from ounces to grams of absolute alcohol per day, the averages (by self-report for a 30-day period) are 108 grams for women and 197 grams for men. I have marked these points roughly on Moon's figure 2.

Note the absurdity of using a single figure for both sexes. As Homiller (1977) points out, the average woman weighs 40 pounds less than the average man. Homiller further notes that the differential accuracy of reporting of alcohol intake by sex has not been explored, but that work by Curlee (1970) suggests that women may underreport excessive drinking more often than men.

Diagnostic Criteria. Other attempts have been made to develop diagnostic criteria for alcoholism on the basis of clinical and laboratory findings. Gomberg (1977) states that she feels obliged to avoid using the term "alcoholism" in her chapter on women because "no one can be sure at this time whether the definition or criteria for alcoholism should be precisely the same for men and for women."

FIGURE 2 – Alcohol Consumption by Melbourne Males Compared to That of Females in 1968



This opinion is similar to that of Wanberg and Horn (1973), who, in considering why there was less variability of alcoholism symptom patterns (as measured by their Drinking History Questionnaire) with socioeconomic factors in women than in men, wondered whether "the conceptual framework for alcoholism" upon which such measurement instruments are based is applicable to women.

The National Council on Alcoholism (NCA) Criteria for the Diagnosis of Alcoholism (1976) was designed by a group of experienced clinicians to apply to both men and women. Although the word "wife" is used in one criterion ("complaints about wife"), the word "spouse" is used elsewhere. Certain of the symptoms might be more likely to apply to men ("preference for drinking companions, bars, and taverns") but also may be related to lower socioeconomic status in women.

In a relatively small sample study of female Alcoholics Anonymous members, James (1975) compared the time of onset of certain symptoms in women with the time sequence found in Jellinek's classic study of male Alcoholics Anonymous members. Reviewing the NCA criteria on the basis of James' findings, only two minor criteria might differ in their timing for a female population. "Gulping drinks" and "surreptitious drinking," included among "early" symptoms by the NCA committee, might be indications of later-stage disease in women. Glatt's study in England (1961), involving 77 women and 192 men diagnosed "alcoholic,"

tends to bear out this difference, although there is considerable variation in ages of onset between Glatt's and Jellinek's male subjects as well. Filstead et al. (1976) found high levels of agreement with the NCA criteria in a poll of 362 physicians who have a special interest in alcoholism (members of the American Medical Society on Alcoholism). Ringer et al. (1977) tested the NCA criteria in two male populations: 120 men in treatment for alcoholism and 80 hospital patients "not suspected of being alcoholics." The criteria correctly diagnosed all the alcoholic men, each showing at least one major criterion and 90 percent showing four or more, but picked up 47.5 percent of the controls as well. None of the controls showed four or more major criteria, and 28 percent showed from one to three, chiefly "drinking despite strong social contraindications and blackouts, chronic gastritis, and neuritis." Comments on this study by Kaim, Kissin, Chafetz, and Seixas (1977) point up its strengths and weaknesses, but generally support the diagnostic value of the criteria. It is interesting that none of the commentators mentions the fact that the criteria were not verified for female populations. This is surely an important gap in our knowledge, awaiting serious attention.

Screening Tests. Certain screening instruments for casefinding in alcoholism are enjoying increasing popularity. One such test, the Michigan Alcoholism Screening Test (MAST) was first tested on an all male group of 116 alcoholic patients and 103 controls, and then validated on a group of 307 persons, only 5.5 percent of whom were women (Selzer 1971). The questions seem to have been written for men (e.g., question 11: "Has drinking ever created problems with you and your wife?"). On the other hand, most of the questions seem to be appropriate to elicit symptoms found in both sexes. Zung and Charalampos (1975) studied the discriminating value of the MAST on a group of 200 subjects, 8.5 percent female.

The MAST was used by Moore, with the wording of the male-oriented questions altered to neutral form, in a group of 400 inpatients, 270 of them women, in a private psychiatric hospital (Moore 1972). Twenty-two percent of the women and 50 percent of the men scored in the alcoholic range. The MAST was also utilized in a study of 200 patients in a community general hospital (Moore 1971). Of the 129 women tested, 5.5 percent scored in the alcoholic range and another 1.5 percent were "questionable."

A shorter form of the same instrument, the Short Michigan Alcoholism Screening Test (SMAST), a 13-question test which can be self-administered, has been developed by Selzer (1975). It has been tested on 501 individuals, unfortunately all male.

It seems of considerable importance that screening instruments designed for use by men and women be validated for both sexes.

Clinical Features. Accurate diagnosis in women must be based on analyses of symptoms, signs, and other characteristics of women who are identified as suffering from alcoholism. The literature has many descriptive studies.

These range from case studies such as Karpman (1948) and Southerby and Southerby (1975); to clinical impressions such as Fraser (1976), Oakley (1974), Curlee (1969), Tamerin (1977), Leczycka (1972), and Blume (1974); to analyses of female treatment populations, including Wood and Duffy (1966), Kinsey (1968); and Wall (1936), Van Amberg (1943), and Browne-Mayers (1976), all in a similar middle-class population treated in the same hospital.

Statistical analyses of various characteristics and symptoms of female alcoholic patients as compared to males are provided by Sclare (1970), Wanberg and Horn (1970, 1973), Wanberg and Knapp (1970), Rimmer et al. (1971, 1972), Elder (1973), Bromet and Moos (1976), and Hoffman and Noem (1975). Others have compared male and female clinically diagnosed alcoholic populations using psychological testing, including the MMPI [Rosen (1960); Curlee (1970); Mogar et al. (1970); Jansen and Hoffman (1973)], and the DPI [Hoffman and Jackson (1974)]. Driscoll and Barr (1972) compared 100 alcoholic women to 100 women in treatment for drug dependence. Rosen, in his MMPI study (1960) compared his 56 female alcoholic outpatients to psychiatric outpatients of similar socioeconomic status as well as to populations of alcoholic men. Belfer et al. (1971) compared 34 female alcoholic patients to 10 nonalcoholic wives of male patients who resembled a "normative" population, by means of various psychological tests. The importance of using multiple control populations is stressed by Beckman. In her 1975 review she states, "Many studies are not well designed, using inadequate or biased sampling procedures or inadequate control groups . . ., or presenting only case-history data. Although these studies provide a valuable look at the problem of alcoholism in women, the need for better controlled research is evident." She points out that comparisons should be made to normal women and female psychiatric patients as well as to alcoholic men.

To this important caveat, others must be added. Belfer et al. (1971) shared their experience in evaluating data obtained from clinical interviews of alcoholic women. They found that ratings of such material varied greatly according to the sex and professional orientation of the interviewer.

Subtypes of Alcoholism in Women. A further problem in re-

316-863 O - 80 - 10

searches on clinical characteristics of alcoholism in women is related to subtypes. Alcoholic women have been subdivided in a variety of ways, usually by demographic categorization (socioeconomic status, age, ethnic group) or clinical characteristics. Descriptions of special groups of alcoholic women include black women (Gaines 1976); Skid Row women and those of the "revolving rooming-house syndrome" (Fraser 1976); Skid Row women compared with Skid Row men (Garrett and Bahr 1973); lesbian alcoholics (Weathers 1976; Hawkins 1976); alcoholic housewives (Bedell, 1974); alcoholic middle-aged women undergoing identity crises (Curlee 1960); upper class alcoholics (Tamerin 1971); elderly alcoholics (Schuckit and Gunderson 1978), a group in which, at least in England, the women consistently outnumber the men (Glatt 1978); and Navy and Marine Corps women (Shuckit and Gunderson, 1975), a group thought to have a higher than usual proportion of sociopathic female alcoholics.

In my opinion, the most important and productive subtyping is that described by Schuckit et al. (1969) as primary alcoholism versus alcoholism associated with other pre-existing psycho pathological entities (secondary alcoholism). In women, the most common of these is alcoholism associated with pre-existing affective disorder, which Schuckit et al. found in 27 percent of their sample of 70 women admitted for alcoholism (Schuckit et al. 1969). Relatively small numbers of the alcoholic women could be diagnosed sociopathic, schizophrenic, hysterical or obsessional neurotic, or other personality disorder types. Sociopathic personality, on the other hand, is the most common "secondary" alcoholism in the male (Schuckit and Gunderson 1975). The authors conclude on the basis of clinical and family histories that female alcoholics are a heterogeneous group with at least two major subtypes, and that studies on the natural history of alcoholism (I would add, on treatment and outcome as well) should separate the alcoholic population into appropriate subgroups (Schuckit et al. 1969). Sclare, among others (1970), confirmed Schuckit's findings on the incidence of depression. In his review of 28 clinical studies on the female alcoholic, Schuckit (1972) found only four which both describe their criteria for the diagnosis of alcoholism and divide the population into diagnostic subgroups. It seems clear that future research on clinical populations of alcoholic women should at least attempt to make such a breakdown. I agree with Emrick (1976) in his plea for a moratorium on all studies which "evaluate treat-

ment for heterogeneous groups of alcoholics." Such a moratorium is certainly needed for studies of female alcoholics.

Might There Be a Distinction Between Hereditary and Environmental Alcoholism, With Some Relationship to Childhood Hyperactivity, in Women? The landmark study of Goodwin et al. (1973) of male adoptees raised apart from alcoholic biologic parents, provided strong evidence for a genetic factor in the causation of at least the most severe alcoholism, a factor which is stronger in influence than family environment (Winokur 1976). A followup study of childhood histories of the alcoholic men identified in the first investigation suggested a relationship to the hyperactive child syndrome (Goodwin et al. 1975). Can these findings be applied to the alcoholic woman?

A recent study by Tarter et al. (1977) on a group of 66 alcoholics (49 male, 17 female) composed of AA members and middle and upper middle income patients at a psychiatric hospital, and divided into "primary" and "secondary" alcoholics, showed no difference in the number of symptoms of minimal brain damage (MBD) retrospectively reported by the male and female subjects. Tarter found that the "primary" alcoholics reported almost four times as many symptoms of MBD as did the "secondary" alcoholics, who did not differ in this respect from normal controls. A group of psychiatric patients scored intermediately between the "primary" alcoholics and the normals and "secondary" alcoholics. Many of the descriptive statements which were found significantly higher in "primary" alcoholics compared to all other groups were those characteristic of the hyperactive child syndrome, including: "overactive," "fidgets," "short attention span," "can't sit still," "doesn't complete projects," "impulsive," and "easily frustrated."

A greater than average incidence of alcoholism has been reported in the parents of hyperactive children (Winokur 1976; Mendelson et al. 1971). The ratio of males to females with this syndrome is approximately 3 or 4 to 1, a ratio not unlike that seen in some clinical alcoholism populations.

Of four followup studies of children diagnosed hyperactive, only one mentions drinking (Hechtman et al. 1976; Menkes et al. 1967; Weiss et al. 1971; Mendelson et al. 1971). This study, by Mendelson et al., found excessive drinking in 15 percent of a group of 75 male and eight female patients, whose parents were contacted 2 to 5 years after a diagnosis of hyperactivity had been made. Low self-esteem and sociopathic traits were also found. This finding was remarkable in that the average age at followup

was only 13.4 years. Unfortunately, the data on excessive drinking were not reported by sex. The studies, which made no mention of alcohol use, followed their subjects into their early teens (Weiss et al. 1971), late teens, and middle twenties (Menkes et al. 1967; Hechtman et al. 1976).

The data of Goodwin et al. on female adoptees (1977) did not show a difference in the incidence of alcoholism between adopted-out daughters who had biological parents with a history of hospitalization for alcoholism and those whose biological parents had no such history. Although the study does not support the existence of a genetic predisposing factor, it does not rule out such a factor because of certain features of the study, including the limited sample size.

On the other hand, in a series of followup studies of 55 adoptees (24 male, 31 female) of psychiatrically disturbed biological parents, Cunningham and Cadoret et al. reported that male adoptees showed significantly more disturbance than females and that the males tended to be diagnosed hyperactive (Cunningham et al. 1975; Cadoret et al. 1975, 1976). Drinking and drug use were not reported in the adoptees. The mean age at followup was 17. In these studies, records of parental psychopathology were obtained from adoption agencies, and chiefly reflected problems in the mother, with the fathers presumed "normal" if records of the agency showed nothing otherwise. None of the mothers and only one father of a behaviorally disturbed adoptee were diagnosed alcoholic (Cunningham et al. 1975). Thus, hyperactivity may be somehow related to being the adopted-out child of a disturbed parent; or, on the other hand, perhaps there was alcoholism in the fathers, unknown to the agency, since no psychiatric register comparable to that kept in Denmark was available.

Reports of family studies show high rates of alcoholism in the children of alcoholics (Winokur et al. 1970), as high as 50 percent in some investigations (Lucero et al. 1971). These children also show a significant degree of psychopathology, chiefly "conduct disorders" and school problems (Seixas 1977; Herjanic 1976; El-Guebaly and Offord 1977), and symptoms not unlike those of MBD as found by Fine et al. (1976). Unfortunately, this report did not break down data on 39 children (21 male, 18 female) by sex.

Keeping all of the above in mind, where do we stand at present in our knowledge of the relationships between heredity, hyperactivity, and alcoholism, particularly in women? I believe we are much like Sherlock Holmes about midway through one of his adventures. We have enough clues to define the mystery in general

terms but not nearly enough to solve it; we are not quite sure where to search next; and we have our tendency to play Doctor Watson, jumping to conclusions at the obvious and missing the subtle. Large-scale longitudinal studies represent a potentially fertile approach to this problem.

Longitudinal Studies. Although they are costly, longitudinal prospective studies yield important data not otherwise obtainable. For example, Parker, in his study of sex-role adjustment in alcoholic women (1972), found among other things that the proportion of women who report having "heavy drinking friends" increases markedly with deviance of drinking pattern, along with rejection of feminine roles and an increase in emotionality. He asks, however, whether the heavy drinking friends contribute to alcoholism and negative attitudes toward the "feminine role," or whether it is the other way round? Only longitudinal studies can answer such questions. Two such proposed studies were recently described. Fillmore and Marden (1977) describe a large-scale study proposed by Carpenter et al. of the Rutgers Center of Alcohol Studies, involving a total of 600 subjects (300 male and 300 female), including two special-risk groups (children at a mental health clinic and children of alcoholic parents) and one random sample of children. Measurements include physiological, psychological, sociological and behavioral variables.

Goodwin et al. (1977) describe a prospective study in Denmark following a group of children about whom a great deal is already known because they were part of a pre- and postnatal study. Records of parental hospitalization for alcoholism are available for 250 boys and 226 girls, who will be compared to a control group and followed into adulthood. This proposed study will add greatly to our understanding of the factors important in the development of alcoholism in general, but unfortunately it may tell us less about female alcoholism in North America than in Denmark, since social factors and heavy drinking rates among women in Denmark are different from those in North America, and environment may be more important than heredity in female alcoholism, at least in Denmark.

Casefinding

Doctors, Hospitals and Clinics. Physicians, hospitals and clinics are a major casefinding source for female alcoholics. Women, in general, go to doctors more frequently than men in America and, when they do, they receive more psychoactive drugs (see the excellent review by Cooperstock 1976). Women problem drinkers

also seem to visit doctors more often and may be diagnosed "alcoholic" less frequently than men.

Jones and Helrich, in a 1970 survey of nearly 16,000 physicians in private practice published in 1972, found that between 34 and 43 percent of responding physicians (depending on specialty) reported that 50 percent or more of their patients with drinking problems were female. Among psychiatrists, 10.2 percent said more than half of their problem drinkers were female. Of all specialities, the psychiatrists were the least likely to have diagnosed "alcoholism" in their problem-drinking patients, with 35 percent diagnosing "alcoholism" in less than half. Unfortunately, the poll did not ask the proportions so diagnosed by sex. The authors speculate, however, that this proportion is related to the doctors' reluctance to diagnose alcoholism in women. Psychiatrists also tended to see alcoholism as a symptom more often than other doctors and as a disease less often. The high proportion of female problem drinkers who see private practitioners, probably a socioeconomic status phenomenon, is similar to the observation of Wood and Duffy (1966) that female alcoholics applying for counseling at a clinic for middle-to-upper socioeconomic status patients outnumbered males, whereas male to female ratios in programs serving lower socioeconomic groups were much higher.

Johnson, in a 1964 study of physicians in Nebraska (Johnson, 1965), noted that few of the female alcoholics who consulted doctors came specifically for drinking problems. Eighty-six percent had other chief complaints. James (1975) noted that half the AA women in her study had previously looked for help, trying to discuss their drinking problem with someone who told them they could not possibly be alcoholic. Twelve had received such advice from physicians, five of these psychiatrists.

Curlee (1970), in her study of 100 male and 100 female alcoholic patients, found that a higher proportion of the women than the men had prior psychiatric treatment, both in- and outpatient, although fewer had been treated previously in an alcoholism rehabilitation unit.

If alcoholic women are seen proportionally more often by private practitioners, how adequate is their care? The Jones and Helrich study (1972) found more physicians used the minor tranquilizers "regularly" in the *chronic* treatment of problem drinkers than used Antabuse. For example, for internists: 62.6 percent used chlordiazepoxide (Librium), 51.5 percent used diazepam (Valium), and 21 percent used meprobomate (Equanil, Miltown) regularly, compared to 24 percent using disulfiram (Antabuse). Their patterns of giving such drugs were not explored. James (1975) found 35 percent of the female AA members she sur-

veyed reported that they had abused drugs, nearly all of them prescribed by physicians. Librium was the most commonly abused drug. Morrissey and Schuckit (1977) found a drug abuse history in one-fourth of 300 alcoholic women. Curlee, in the study cited above, noted a higher proportion of female alcoholics than males had abused drugs. Bromet and Moos (1976) found a difference in the same direction in sleeping pill and tranquilizer use, although it did not reach statistical significance.

Thus, physicians *must* be a primary target for the improvement of casefinding and of adequate treatment for the female alcoholic.

A recent study paints a grim picture of the current status of physicians' sensitivity to, interest in, and treatment for alcohol problems (Westermeyer et al. 1978). Westermeyer et al. offered 25 attending physicians at a university teaching hospital the opportunity to have an alcoholism detection questionnaire (MAST) administered to 30 of the patients on their services and to have free consultation provided for those scoring in the alcoholic range, at the request of the doctor in charge of the case. Five "attendings" refused the offer, two not wishing to inconvenience the patients or make them angry. Of the 300 patients surveyed (sex distribution not reported) 19 men and 8 women had positive scores. In spite of the screening findings and consultation request left in each chart, lacking only a physician's signature, only nine requests for consultation were made. Only four patients had a secondary diagnosis of chemical dependency at discharge and none had a primary diagnosis. For 17 identified patients, no mention of alcohol-related problems could be found anywhere in the hospital record at discharge, but several noted "normal drinker" in the face of evidence to the contrary on the screening test. None of the identified cases for whom consultation was not asked had any recommendations for specific treatment for chemical dependency post-discharge. The authors conclude that there is an "unwillingness to be concerned" with the diagnosis and treatment of chemical dependency on the part of the medical and nursing staff. I think their choice of words was very kind.

I wish I had some simple suggestions for projects which would improve this miserable situation. I hate to think it would take a series of well-publicized malpractice suits against hospitals and doctors who failed to make correct diagnosis and to recommend treatment, to raise the consciousness of the health professions. However, I would recommend increased support for teaching about alcohol problems in the professional schools and in continuing education, using whatever levers are available for continuation of Federal support for such programs.

I would also suggest that funds be made available to follow

heavy-drinking pregnant women identified in current studies on the fetal alcohol syndrome, postpartum. There is evidence that women drink less while pregnant than otherwise (Little, Schultz, and Mandell 1976). Following this group will be important not only for casefinding purposes, but also it may also uncover a group of women who differ physically and psychologically from other alcoholic women and provide a model of outreach for use in obstetric and pediatric practices.

Lawyers, Marriage and Divorce Counselors, and Family Service Agencies. Sclare (1970) and Wood and Duffy (1966), as well as others, have noted that marital problems are frequent in alcoholic women and are often the precipitating factor in seeking help. Divorce is common in alcoholic marriages. A significant percentage of applications to agencies for family services are associated with alcohol abuse (Paolino and McCrady 1977).

Thus a study of the casefinding and referral abilities and practices of lawyers and family service personnel would be of great interest, particularly since marital therapy alone is not considered sufficient treatment for alcoholism at present (Dinaburg et al. 1977). In my experience, lawyers frequently refer their alcoholic clients for treatment when there are criminal charges against them (driving while intoxicated or DWI, breaking and entering, assault, harassment, etc.), but seldom when their clients are seeing them because of a divorce or custody problem. This difference probably is related to their views of their clients' "best interests" in terms of what would count for or against them in court. Lawyers are particularly deserving of serious study because of their immense casefinding potential. An experiment can also be tried which adds a mandatory alcoholism screening and referral mechanism in those States which require an attempt at reconciliation prior to granting some types of divorce.

Industrial Alcoholism Programs. The alcoholism industrial program has proved to be a major casefinding tool in the treatment of alcoholic men. Its differential usefulness in reaching women has yet to be studied in an organized way. In an interview in *Women's Work* (Merkin 1977), Zukerman, a labor liaison specialist for New York State's Alcoholism Division, makes reference to low referral rates for women in programs in industries with large female populations, such as garment workers and hospital workers. Many heavily female occupations lack such programs (e. g., teaching, nursing, social work). Various studies, such as that of Sclare (1970), find male alcoholics more likely to come into treatment because of job problems and females more likely to seek help because of marital and family problems. On the other hand,

industrial programs that have made a special effort to reach women, such as one mentioned by Youcha (in press) and another cited by Gomberg (1975), have had significant numbers of women referred.

Drinking Driver Programs. Driver rehabilitation programs constitute a second major method of casefinding widely used today. For example, Kern et al. (1977) reported that 45 percent of 855 participants in a driver rehabilitation program were referred for further help.

Only 9 percent of the program participants were female. Robinson (1976) reported 8 percent women in a drinking driver program in North Carolina.

My own 1968 study of 46 male and 46 female patients in an alcoholism unit found that 100 percent of the women who had ever driven a car admitted to driving while drinking and 43 percent admitted having been at fault in one or more accidents while drinking and driving, half of these admitting to one or more "major" accidents. This compared with male figures of 85 percent, 78 percent, and 39 percent, respectively. Thus women alcoholics *do* drink and drive and have accidents. Police handle men and women differently; they are less likely to arrest a woman. Argeriou and Paulino (1977) have studied women arrested for DWI and conclude that they are a distinct subgroup of the larger group of women who drive and drink. Women are likely to be arrested only if involved in a traffic violation, accident, or the physical or verbal abuse of a police officer. They conclude, "The unequal treatment of men and women by the police, while apparently favorable to women in the short run, may well be deleterious if it results in aiding problem-drinking women to keep their problem hidden."

A U.S. Department of Transportation study also showed that women arrested for driving while intoxicated were more likely to be represented by a lawyer. Such representation made them less likely to be found guilty, more likely to have their cases disposed of by fine, and less likely to be referred for rehabilitation (Blumenthal and Ross 1973). Surely the policeman, judge, and DWI program are other worthy areas to study in an effort to improve casefinding for women.

The Alcoholic Woman Who Receives Public Assistance. Since many alcoholic women are divorced and head single-parent households, many receive public assistance—some in the form of Supplementary Security Income (SSI), others through Aid to Dependent Children (ADC). Still others receive some other form of "home relief." Organized casefinding in this group has not yet, to my knowledge, been studied and evaluated. A current Department of

Health, Education, and Welfare (DHEW) requirement that all persons receiving SSI thought to be problem drinkers must participate in treatment programs under penalty of withdrawal of support for a minimum of 30 days, has been criticized by Bissell (1976). Certain States, including New York, have similar requirements for home relief recipients. I agree that such regulations are discriminatory and constitute cruel and unusual punishment. If DHEW will not withdraw this requirement, the Department ought to at least test its value as a casefinding agent in a well-designed and controlled study, comparing it to other, more humane measures.

The Hidden Alcoholic Woman. Outreach efforts appropriate for the alcoholic housewife should take advantage of her interest in family. Bedell (1974) found that his group of alcoholic housewives showed great concern for their children. Sixty percent of James' group of alcoholic AA members (James 1975) were members of the PTA during their drinking years. Child health clinics, pediatricians and gynecologists, as well as family physicians and internists, deserve special attention in this effort.

One way to reach the woman who drinks at home and has few contacts outside her house is television. My own experience has been that following appearances on television talk shows, I usually receive telephone calls from women who have had no previous diagnosis, treatment, or AA contact but feel they have a problem and want help. The most recent of these women lived very near my hospital but had no prior knowledge of our program's existence. (She told me she was phoning from her garage so that no one would overhear her.) Jan Clayton, the actress who has publicly revealed her status as a recovered alcoholic, has reported similar experiences (Youcha, in press). A research project aimed at reaching these women through television, or a television-telephone treatment system, would seem to be a worthwhile project.

Outreach to the Gay Community. Another unexplored area in which the need is great is casefinding for the lesbian alcoholic. Saghir et al. (1970) reports that 35 percent of 57 women members of a gay organization reported excessive and/or problem drinking compared to 5 percent of heterosexual controls. Although these figures need verification, both Hawkins (1976) and Weathers (1976) agree that the need is great. In addition, Weathers points out that lesbians have experienced discrimination in applying for alcoholism treatment.

Sobering-up Services. With the trend toward removal of public intoxication from criminal codes, many States and Canadian provinces have developed networks of temporary shelters which provide sobering-up or detoxification services on a voluntary basis to

intoxicated persons brought in by police or others. These services represent an entry point into treatment and a major casefinding resource for men. For women, however, the system has been less successful.

For example, the sobering-up station network in New York State in 1976 served 5,072 individuals, only 466, or about 9 percent of them, female. These women accounted for 1,218, or about 6 percent, of the 21,631 visits (Lyons 1978).

Perhaps this resource could be adapted in some way to serve the needs of alcoholic women in states of distress or temporary crisis through some modification of program or outreach. Shelters now being developed for battered women often exclude those who are alcoholic. Model programs of this type deserve serious consideration.

Information and Referral

Between casefinding and treatment lies the province of the information and referral agency. Corrigan (1972), in an excellent study of a New York City information-referral service for problem drinkers, found that one-fourth of the problem-drinker callers were women, but less than one-fifth of the drinkers about whom calls were made by others were female. This seems to confirm the relative isolation of the female drinker. A total of 68 percent of all those referred actually sought treatment. Since no male-female breakdown is given, the reader assumes that follow-through rates for men and women were similar.

The problem for the referral agency, however, is the availability of appropriate resources to which callers can be referred. Bernstein made a survey of inpatient treatment resources in New York City in 1975. She found the following distribution in Manhattan: *detoxification beds:* male or female — 110, male only — 166, female only — 14; *inpatient rehabilitation:* male or female — 50; male only — 30; female only — 18. For all of New York City there were the following beds in halfway houses: male or female — 69; male only — 99; female only — 0.

Two years later, the Committee on Women and Alcoholism in New York State (1977) sent a questionnaire to in- and outpatient alcoholism facilities and received 88 replies. They found an overall breakdown of beds as follows: male or female — 28 percent; male only — 55 percent; female only — 17 percent. In outpatient clinics, women accounted for 24 percent of patients. Based on remarks and comments of respondents as well as their data, they concluded that alcoholic women in New York were underserved. Robinson (1976), in comparing men and women in a nonhospital

detoxification facility into which police bring intoxicants, found that the women were thought more ready for further treatment, but had fewer community resources available to them.

Treatment and Outcome

I cannot approach this subject without calling attention to some of the literature on the medical, psychological, and psychiatric treatment of women in general. First of all, it has been documented that those traits judged "normal" for the male are also judged "normal" for all people. Traits judged "feminine" are considered neither "normal" nor "ideal" (Task Force on Sex Bias and Sex-Role Sterotyping in Psychotherapeutic Practice, 1975). The majority of psychiatric patients are female. Societal sex-role stereotyping plays a role in expectations of both therapist and patient (Lerner 1978). Levine (1976) gives a very personal view of sexism in psychiatry, sharing some of her experiences as a psychiatric inpatient.

Alcoholism treatment, concerned as it is with returning the alcoholic to sober functioning, cannot be entirely free of the effects of the sexist biases of the society at large. As a group, alcoholism treatment personnel have been criticized as putting too much emphasis on whether or not our patients stop drinking, at the expense of other parameters of improvement. At least we have not tended to measure outcome in women in terms of how passive, pleasing, submissive or "feminine" our expatients appear at followup. We must agree with the American Psychological Association task force that consciousness-raising and education are needed to develop a nonsexist therapy.

In attempting to review the literature in this area of studies on alcoholism treatment more than in others, I have been frustrated by the widespread habit of researchers of failing to identify in their titles the sex of patients involved in various studies. Thus a paper about treatment of alcoholics might be about a group of all men, or of men and women, while if the word "female" is in the title it is sure to be about women only. This problem leads to my first (and least expensive) recommendation to NIAAA (see below).

A second major frustration in reviewing the literature on treatment is that many of the best controlled studies on treatment involving substantial numbers of patients have come out of the Veterans Administration, a practically all-male treatment system (e.g., Kaim et al. 1969; Sampliner and Iber 1974; Baker et al. 1977).

Special Programing for Women. A variety of models for the

treatment of alcoholic women have been described, but none as yet has been evaluated. Some involve alterations or additions to a basic program developed for men; others involve separate, women-only programing (Weathers 1976; Sandmaier 1977; Schultz 1975).

Many authors have called attention to the special needs of many women for childcare services to allow their entrance into treatment. Youcha (in press) describes an outpatient clinic which greatly increased its female attendance by installing a supervised playroom and a halfway house in which mothers and their children could live together while the mother took part in treatment and rehabilitative activities. In my own treatment center, the highest proportion of female patients is found in our day hospital, where 43 percent of our visits last year were by women, as opposed to 17.5 percent of detoxification and 23.5 percent of rehabilitation admissions. Day treatment is particularly convenient for housewives and single parents whose children are in school or day care.

Women for Sobriety, a nationwide program of group support for alcoholic women, was founded in 1976 (Kirkpatrick 1976). All-women groups of AA have also been formed. Not until controlled studies of these programs are made will we have any idea of the comparative value of these different approaches.

Group Versus Individual Therapy. A variety of opinions are on record concerning the most effective treatment approach for women. Lindbeck (1975) writes that female alcoholics utilize individual or family therapy better than group therapy, while the latter works better for men. Curlee (1967) states that women do not relate well in group therapy or AA. On the other hand, Avery (1976) argues for the necessity for group-oriented activities for the female alcoholic who has become isolated and "easily bored," and Battegay (1970) states that alcohol and drug dependent women are treated more effectively in groups. Ottenberg (1974), Blume (1974), and Bissell (1976) favor mixed male-female groups, supplemented by all female groups exploring women's issues. Seiden's review of female psychology (1976) points out the importance of female friendships to the general mental health of women. The fact that single and widowed women are happier in general than single and widowed men has been attributed in part to the support they derive from female friendships. This argument, if true, would support the utility of group treatment for women, particularly all-female groups.

A study by Curlee published in 1971 is often quoted in favor of individual treatment for alcoholic women. The author polled 100

consecutive male and 100 consecutive female patients in a private alcoholism rehabilitation facility at the time of discharge, asking which elements in their treatment had been most "helpful." Both men and women ranked lectures on alcoholism, moral inventory steps of AA, and counselor contact high on the list, but there were significant differences in women's preference for contact with the counselor and psychologist and men's for group therapy and informal contact. This was interpreted as suggesting that women get most out of individual therapy, while men prefer group therapies. First, it must be noted that these choices were measured before the patient returned to the community and were not followed up. Second, the top choice of both sexes was a mixed-sex group activity and the second was individual contact with a clergyman. Since all the therapy groups were same-sex and all the counselors were male (the sex of the psychologists was not reported), the women's choices might also have been interpreted to signify their preference for interacting with a man or a mixed group. Surely further research on both the acceptance and effectiveness of various alcoholism treatments is needed. Such work should certainly divide the female patient at least into "primary" and "affective" alcoholic groups, two groups for whom the treatment of choice is likely to differ.

Family and Marital Therapy. In his recent review of family therapy in the treatment of alcoholism, Steinglass (1977) states, "Although every study we have mentioned concludes with an enthusiastic statement encouraging the greater use of family therapy, it is also apparent that very little hard evidence exists at this point demonstrating either the efficacy of family therapy itself or the comparative value of family therapy versus more traditional forms of therapy in the treatment of alcoholism."

Many reports in the literature concern families in which the alcoholic member is male (Paolino and McCrady 1977). Few report on families including female alcoholics.

Meeks and Kelly (1970) studied five families in followup therapy after the alcoholic member completed a treatment program. In four cases the alcoholic spouse was the husband; in one case, the wife. A brief description of this case is presented in their paper. Comment is made that this woman was more inclined to accept and reinforce the "sick role" than were the males in the study. Paolino and McCrady (1977) present a single case report of an alcoholic woman and her husband treated together on a community-oriented mixed psychiatric ward.

In one of the few controlled studies in this field, Cadogan (1973) compared the treatment success of 40 couples. Twenty

of them received followup treatment in a multiple-couples group following a course of treatment for the alcoholic member in a "traditional" alcoholism unit. This group had a significantly higher success rate than 20 couples who had volunteered for the same therapy but were held on a waiting list while the alcoholic member received traditional aftercare. In only one of the experimental couples was the wife the alcoholic; four of the alcoholic spouses in the control group were women. The data were not sufficiently detailed to permit the reader to judge sex differences in outcome.

Dinaburg et al., in 1977, reviewed the meager literature and presented a detailed single case report of a 39-week treatment of an alcoholic woman and her husband with a 9-year followup. They concluded that "Family therapy in the absence of other treatment has been ineffective in changing the long-term course of an alcoholic," and they considered outpatient family therapy with female alcoholics an "experimental" procedure at present, best combined with other therapy for the alcoholic.

Behavior Therapy. Nathan and Bridell (1977) reviewed the entire range of behavioral therapies that have been applied to alcoholism. Most of the newer experimental therapies have been tried primarily on male subjects (e. g., Sobell and Sobell 1976), so little can be said at present of their value for female alcoholics. Aversion therapies, which have been used over a longer period of time, have been evaluated in women to some extent. The most positive study is that of Weins et al. (1976), who followed 209 men and 52 women treated with aversive conditioning and found 63 percent abstinent for the first year. Since sex differences were not reported, it is assumed the rates were not very different for men and women. This was an upper socioeconomic status group, mainly married and employed.

Caddy and Lovibond (1976) present the first controlled study comparing different types of behavior therapy. There were 49 male and 11 female patients divided into three groups of 20. Each of the groups differed in some components of a multimodal behavior therapy program in which they participated. Unfortunately, since the data were not broken down by sex, it is impossible to know how many women were in each group and whether they differed in outcome.

In their chapter on behavioral approaches to alcoholism, Steffen et al. (1977) mention assertiveness training, which should be a natural for helping alcoholic women. The only references I could find to its use in alcoholism treatment, however, described its use in a group of men (Adinolfi et al. 1976) and in a group whose sex was not described (Materi 1977).

Chemotherapy. In his 1973 review of 192 studies on drug treatments in alcoholism, Mottin (1973) concludes that "there is no consistent and extensive critical support for any of the current drug therapies used to attenuate alcohol intake." Mottin did not comment on sex differences in his review, primarily because most of the studies did not present their data in this form. The majority of the drug treatment studies Mottin found in the literature were poorly controlled or uncontrolled and utilized poorly categorized populations.

One exception is the series of studies of Kissin and Gross (1968). In their carefully controlled double-blind studies on the long-term treatment of unselected chronic alcoholics in an outpatient clinic, the authors were unable to show significant differences in therapeutic effect between drug and placebo. Drugs tested included tranquilizers, antidepressants, and tranquilizer-antidepressant combinations. The authors concluded that "the random prescription of either tranquilizer or antidepressant alone, to a heterogeneous population, might be contraindicated since the benefit derived from the specific effects of these drugs in appropriate patients might be cancelled out by the detrimental effects of these drugs in inappropriate patients." It seems obvious that, to be of any value, all future drug studies should subdivide the alcoholics receiving the drug in question at least by clinical subtype and also by presenting symptoms and socioeconomic status.

Refinement in the application of chemotherapy, both in patient selection and timing, should produce more meaningful results. For example, Belfer et al. (1971) have administered anti-anxiety agents in the 10 days preceding the onset of their menstrual periods to a small group of female alcoholics who reported strong correlation between their drinking patterns and menstrual cycles. Such selective approaches should be tried in larger groups with appropriate controls.

Subsequent to Mottin's review, a series of studies on lithium as a possible drug in alcoholism treatment have appeared. Studies in (male) rats show that lithium treatment causes a marked reduction in voluntary alcohol intake in subacute studies and has little effect on withdrawal (Ho and Tsai 1976). In human males, lithium has been ineffective in blocking or dampening alcohol-induced "highs" (Judd et al. 1977). Lithium has been shown to have a significant effect in reducing withdrawal symptoms in a laboratory-controlled drinking and withdrawal experiment in 18 male alcoholic patients (Sellers et al. 1976).

Kline et al. (1974) carried out a double-blind placebo-controlled clinical study in alcoholics who also showed depression at the time

of their evaluation in a VA hospital. I assume all their patients were male; sex was not stated. Thirty patients, 16 in lithium and 14 in placebo groups, were followed as outpatients. The lithium group had a much better outcome during the first year, as measured by the number of rehospitalizations required. Depression scores during the followup period improved equally for both groups.

Merry et al. (1976) followed a group of 70 patients for 1 year after their treatment in an alcoholism rehabilitation unit. Of the 38 that completed the 1-year followup, 27 were men and 11 women. Approximately half the group received lithium carbonate and half placebo. As measured in "days incapacitated by alcohol," the depressed group on lithium did better than the placebo-treated depressed group, but there were no differences in the nondepressed groups. Depression scores fell more for the lithium group of depressed patients than for the placebo group, although the difference did not reach statistical significance. The success rates were not compared by sex. Bolotoya et al. (1977), in Russia, also report good results in alcoholism treatment using lithium.

Young and Keeler (1977), on the other hand, reported that 15 male patients who were both bipolar manic-depressive and alcoholic (a group excluded from Kline's study) maintained on lithium carbonate for a year showed greater morbidity from their alcoholism than from their manic-depression. The authors were disappointed in the apparent lack of effect of lithium treatment on alcoholism symptoms. They point to the high dropout rates of Kline's and Merry's subjects reflecting probable treatment failures, lowering their success rate. Young and Keeler did not mention, however, whether specific alcoholism treatment had been given to their manic-depressive group. This might greatly improve outcome.

In both Kline's and Merry's studies, the depressed alcoholics were those showing depression during hospitalization, rather than a history of depression pre-dating their alcoholism, which would have put them in the affective-alcoholic category. The number of women was small (only seven depressed women). Current knowledge of lithium and its therapeutic value would lead us to suspect, however, that it is the subgroup of affective-disease alcoholics found in populations of alcoholic women who would be the patients most likely to benefit from lithium treatment. I therefore believe that a controlled trial in this group would be well worth the investment in time, effort, and funds.

In their review of alcohol metabolism and the menstrual cycle, Jones and Jones (1976) suggest estrogen as a potential drug for treating alcoholic women. They report that they obtained higher

316-863 O - 80 - 11

peak blood alcohol concentrations on equal (per pound) doses of alcohol in women than in men and that these peaks bore a relationship to the menstrual cycle. Women on oral contraceptives or replacement female hormones were found to metabolize alcohol more slowly than other women. Little et al. (1976) found that pregnant women tended to reduce their drinking spontaneously, many reporting changes in the physiological effects of alcohol. Belfer and Shader (1976) report that about 60 percent of alcoholic women related their drinking to their menstrual cycle, particularly the pre-menstrual period. (Unfortunately, they did not separate their group into those on exogenous hormones and those not using these.) The finding of Belfer and Shader is consistent with Seiden's statement that about 50 percent of women in the general population report emotional changes during the menstrual cycle (Seiden 1976). Podolsky (1963) reports seven case histories of female alcoholics whose drinking reflected menstrual changes.

In relation to their findings on hormonal influences on alcohol metabolism, Jones and Jones (1976) suggest that estrogen, a monoamine oxidase (MAO) inhibitor, may be of value in treating depressed alcoholic women, particularly those with gynecological problems. To the best of my knowledge, alcoholic women in general have not been found estrogen-deficient. However, the above-mentioned findings all invite further controlled research on sex hormone levels in alcoholic women, divided according to menopausal status and diagnostic subgroups. Those found deficient might be candidates for a blind placebo crossover study of estrogen therapy.

Length of Treatment and Treatment Setting. Practically nothing is now known about optimal settings and lengths of treatment for various groups of alcoholic patients. The Rand report, in a large group of unselected male patients, showed that their patterns of treatment were often erratic. There was a modest effect on positive outcome of greater amounts of treatment at 6 months and of greater effect at 18 months irrespective of treatment duration (Armor et al. 1976).

Rand also found similar remission rates among different treatment settings. I have criticized this conclusion and others because important patient and treatment variables (such as diagnostic subtypes) were ignored and because the patients were not randomly assigned to treatment (Blume 1977). Nevertheless, the Rand study points up our need to know how much therapy is adequate therapy, where it is best provided, and for whom. Krimmel and Falke (1962) argue the efficacy of short-term (one to five visits) treatment for at least some alcoholics.

With third-party payment and Professional Standards Review Organizations (PSROs) and with health insurance on the horizon, we must admit to having little objective data upon which to recommend normative lengths and types of treatment for men and even less for women.

Rates of dropout from treatment for alcoholic women are probably similar to those for men (Corrigan 1974; Kern et al. 1977). Readmission rates for women, at least to one short-term detoxification program, were lower than expected (Reiff-Ross and Adams 1976).

It is reasonable to suppose that optimal treatment setting and duration will be different for women than for men, for "primary" than for "affective disease" alcoholics, and for alcoholic women who also misuse drugs, than for those who don't. These patterns should be studied.

Outcome Studies. In a series of reports based on review of 394 outcome studies published in English between 1952 and 1973, Emrick presents a survey of the literature on the results of psychologically oriented treatment of alcoholism (Emrick 1974, 1975). His analysis reveals many methodological difficulties in these studies as a group, but also a general agreement in results found in heterogeneous populations and varied treatment methods. He also finds a recovery rate for untreated and minimally treated patients. Although Emrick did not analyze his data by sex in his published material, he was kind enough to send his data on sex differences for use as an appendix. (See appendix of this paper.)

In 28 of the studies reviewed by Emrick, the authors compared their results by sex. Of these, three reported a significantly positive relationship ($p. < .01$) between being female and outcome measured in terms of drinking behavior. Four which reported a negative relationship between being female and drinking outcome showed significance of between .01 and .1. Five studies showed no relationship between sex and dropout rates. One study reported a significantly positive relationship between being female and remaining in treatment, and two showed a negative relationship (Emrick 1975).

Dudko and Kochev in Russia (1971) report less satisfactory results in the treatment of alcoholism due to a higher incidence of complications in female patients. Glatt in England (1961) also found a better outcome in his male patients than in females 2-3½ years after hospital discharge. He divided both groups into psychopathic (with poorer outcome) and nonpsychopathic (better outcome) patients.

Bateman and Petersen (1972) compared treatment outcomes in 381 male and 136 female patients hospitalized for alcoholism. Ab-

stinence for the 6-month posthospital period was the only success criterion used. The male patients did somewhat better than the females. Pemberton (1967) also found a better outcome for men in a group of 50 male and 50 female higher socioeconomic status hospitalized alcoholics.

Kern and Schmelter (1977) found that 189 men and women discharged from a medical detoxification program did equally well. In a related unpublished study, good outcome was correlated with AA attendance. Fitzgerald et al. (1971) also found the 4-year outcome in male and female patients about equal in a group treated in a rural State hospital. The women had a higher initial dropout rate but dropping out did not have the same negative predictive value as in men.

Medhus (1975) followed 83 female alcoholics of lower socioeconomic status subjected to compulsory treatment in Sweden. This group showed a very high mortality, especially from suicide. The author mentions that those who committed suicide had a history of previous attempts; unfortunately, the group was not broken into diagnostic subgroups.

Schuckit and Winokur (1972) reported followup data on 45 alcoholic women treated at two psychiatric hospitals in St. Louis. Twenty-one were "primary" alcoholics, 20 "affective disease" alcoholics, and four sociopathics. The affective group had the best prognosis (72 percent in the good outcome group as opposed to 37 percent of the primary and one of the four sociopaths). The definition of alcoholism used in this study was a rather broad one, however, and included women not physically addicted to alcohol.

In an unpublished study of 175 women dating from 1968, Currier et al. found that alcoholic women with a secondary diagnosis of depression or "latent or residual" schizophrenia did as well as, or better than, those with no other diagnosis or with passive-aggressive personality disorder 1 year after treatment in an inpatient alcoholism unit for women. Thomas (1971) compared 90 female alcoholics who did well with 90 failures after hospital treatment for alcoholism. Among other factors, a history of the use of other drugs was related to poor outcome, whereas early treatment and AA involvement were correlated with therapeutic success.

What can we make of the assorted and sometimes conflicting data on outcome? First I believe that we must agree with Emrick (1976) in his call for a moratorium on all treatment outcome studies on heterogeneous groups of alcoholic patients.

Second, broad outcome studies of the results of multimodal treatment programs are of less current interest and value than

specific studies of the differential effectiveness of specific treatments in specifically defined groups. Whether criteria for favorable outcome in alcoholic women should differ from that in men is another question for study.

Gaps in Knowledge and Suggestions for Further Research

I have tried to point out major gaps in knowledge as a part of the literature review. I make the following recommendations based on research gaps and needs:

General Proposals

1. The first suggestion will cost nothing but will add clarity to the field. NIAAA should require that in all research supported by Federal alcoholism funds, the title of the project and all papers and presentations thereon specify whether the research concerns all male subjects, all female subjects, or a mixed group, reserving the generic terms "alcoholism" or "alcoholics" to those studies which include both sexes.
2. NIAAA should accept in principle the need for special research allocation and impetus for the study of women and alcohol, because of the dearth of knowledge and the special difficulties in obtaining data; but also studies on alcoholic women should be adequately controlled (e.g., compared to normal women and female psychiatric patients as well as alcoholic men) and subdivided into diagnostic groups.

Diagnosis

1. The NCA criteria for the diagnosis of alcoholism, the best clinical guidelines now available, should be validated on a female population.
2. All future proposed projects to develop diagnostic or screening instruments should be tested on female as well as male populations, unless they are specifically designed for one sex only, and clearly identified as such.
3. A specific screening or diagnostic instrument designed to identify alcoholism in women, with a built-in distinction between (at least) "primary," "affective," and "sociopathic" subtypes, would be very welcome.
4. Large-scale longitudinal studies designed to follow physiological, psychological, familial and social variables in both

sexes should be supported, if possible in a part of the world where alcoholism in women is at least as frequent as it is in the United States.

Casefinding

1. Industrial programs should be monitored carefully for their efficiency in identifying alcoholism in women and improved through a shift in emphasis where this ability is deficient.
2. Studies of driver rehabilitation programs, aimed at identifying the reasons for their present deficiency in reaching women, are important. Demonstration projects to reach police and change their attitudes toward the female drinking driver might help.
3. Badly needed are models for reaching doctors, particularly residents and those who teach residents, child care agencies, marriage and divorce counselors, and lawyers to improve their attitudes toward the alcoholic woman and their identification and referral skills.
4. A study of the effectiveness and efficiency of the mandated treatment requirements which accompany SSI and State public assistance grants is needed.
5. Funds should be made available to study and follow those heavy-drinking women identified in current studies of the fetal alcohol syndrome.
6. A television or television-telephone model for reaching the "hidden" alcoholic housewife might be attempted and evaluated.
7. Ways to improve utilization of sobering-up services by women are needed.

Treatment and Outcomes

1. There is a great need for carefully controlled studies comparing different methods of treatment in groups of alcoholic patients, subdivided by or controlled for diagnostic category, age, sex, and socioeconomic status. These should include models which compare length as well as type of treatment.
2. A specific study of the long-term treatment of the "affective disease" type of alcoholic woman, utilizing lithium, and perhaps antidepressants on an intermittent basis, would be helpful.
3. Further studies on sex hormone levels in alcoholic women

and a trial of estrogen replacement where deficiencies are found would be of value.

Research Priorities

I would rank my above suggestions as follows:

1. The requirement for specifying sex of subjects in all titles of research projects and presentations, ranked first because it is relatively easy and inexpensive.
2. Longitudinal studies of large scale to improve our understanding of the development of alcoholism.
3. Adequately controlled research on the differential effectiveness of various treatment approaches for various subgroups of alcoholic persons, including a trial of lithium and/or antidepressants in "affective disease" alcoholic women and including consideration of optimal length of treatment.
4. Validation of the NCA criteria for women.
5. Model programs for outreach and casefinding for women, especially aimed at health professionals and including obstetric populations: programs to reach lawyers, marriage counselors, etc.; and programs to reach housewives via television.
6. Studies of women's participation in industrial, sobering-up, and DWI programs aimed at increasing effectiveness for women.
7. Study of sex hormone levels in alcoholic women.
8. Development of a screening-diagnostic tool for the identification and subtyping of alcoholism in women.
9. Study of the effectiveness of mandated treatment for public assistance recipients.
10. A general emphasis on including female populations in all possible studies on drinking, problem drinking, and alcoholism.
11. A general commitment to the need for the study of women and alcohol.

Appendix

Data from the review of literature on the outcome of psychologically oriented treatment of alcoholism is supplied by Chad Emrick, Ph.D. The following data are based on the 265 studies covered in the 1974 article referred to below:

Studies reporting no relationship between the sex of an alcoholic patient and drinking outcome: Aharan et al. (1967), Bahn et al. (1963), Bolman (1965), Edwards (1966), Fitzgerald et al. (1971), Fox (1967), Gerard and Saenger (1966), Goldfried (1969), Haberman (1966), Heilbrun (1971), Hoff (1955), Horowitz et al. (1970), Merriman (1962), Mindlin (1959), O'Reilly and Reich (1962), Pfeffer and Berger (1957), Proctor (1956), Proctor and Griffin (1955), Ritson (1968), Saint et al. (1952), Selzer and Holloway (1957), Sereny and Fryatt (1966), Thomas et al. (1959), Vincent and Blum (1969), Wolff and Holland (1964).

Studies reporting significant ($p < .01$) positive relationship between being female and drinking outcome: Bahn et al. (1963), Fox and Smith (1959), Goldfried (1969).

Studies reporting significant ($.01 < p < .10$) positive relationship between being female and drinking outcome: Bahn et al. (1963).

Studies reporting significant ($.01 < p < .10$) negative relationship between being female and drinking outcome: Bahn et al. (1963), Glatt (1961*b*), Hoff (1955), Pemberton (1967).

Studies reporting no relationship between the sex of an alcoholic patient and outcome on indices other than drinking: Aharan et al. (1967), Bolman (1965), Glatt (1955), Selzer and Holloway (1957), Voth (1963).

Studies reporting significant ($p < .01$) negative relationship between being female and outcome on indices other than drinking: Glatt (1955).

Studies reporting no relationship between sex of an alcoholic patient and staying in alcoholism treatment: Fitzgerald et al. (1971), Hoff (1955), Panepinto et al. (1970), Soren and Thomas (1970), Zwerling and Clifford (1957).

Studies reporting significant ($p < .01$) positive relationship between being female and staying in treatment: Fitzgerald et al. (1971).

Studies reporting significant ($p < .01$) negative relationship between being female and staying in treatment: Bahn et al. (1963), Fitzgerald et al. (1971).

Appendix References

With the exception of the following, all references can be located in the bibliography in: Emrick, C. A review of psychologically oriented treatment of alcoholism. I. The use and interrelationships of outcome criteria and drinking behavior following treatment. Q J Stud Alcohol, 35:523-549, 1974.

Bahn, A.K.; Anderson, C.L.; and Norman, V.B. Outpatient psychiatric clinic services to alcoholics, 1959. *Q J Stud Alcohol*, 24:213-226, 1963.

Mindlin, D.F. The characteristics of alcoholics as related to prediction of therapeutic outcome. *Q J Stud Alcohol*, 20:604-619, 1959.

Panepinto, W.C.; Higgins, M.J.; Keane-Dawes, W.Y.; and Smith, D. Underlying psychiatric diagnosis as an indicator of participation in alcoholism therapy. *Q J Stud Alcohol*, 31:950-956, 1970.

Zwerling, I., and Clifford, B.J. Treatment of chronic alcoholism. *NY J Med*, 57:3869-3875, 1957.

Discussion Summary

Discussion Leaders: Juan Chavira, Ph.D.
Joan Volpe, Ph.D.

Dr. Volpe and Dr. Chavira commented on specific issues raised by Dr. Blume's paper and led a discussion of research needs. Both Dr. Volpe and Dr. Chavira stressed the value of an anthropological approach to such research. Dr. Chavira also emphasized the importance of cultural sensitivity and cultural relevance in alcohol research. Dr. Volpe presented data and insights from her experience with a halfway house, emphasizing the treatment and recovery process and the factors — involving therapists and families as well as patients — affecting recovery. Significant issues raised by the discussion leaders and other workshop participants are summarized below.

Methodologies for research — The value of a natural history approach to alcoholism research was suggested. It was argued that a new paradigm is needed for understanding human behavior, an approach which considers behavior situationally, rather than attaching absolute meanings or values to it. An example was presented of a recovering alcoholic woman who lies to her employer about her work history to hide her past problems and then is "found out." The employer assumes that, because she lied about this, she is a liar who will be untruthful about job-related matters and fires her. In fact, her initial lie was caused by the need for a job and a belief that her alcoholism, if known, would prevent her getting a job; it was situational behavior not likely to be repeated in other contexts. It was similarly stressed that norms are not something culturally imposed in all-encompassing form. We all revise norms to fit situations and behaviors.

The importance of looking at drinking behavior in a cultural and social context was also emphasized. In this regard, alcoholism and alcohol abuse need to be differentiated. For example, among Mexican Americans in South Texas, binge drinking may be a primary activity reflecting drinking as part of a ritual. Cultures and ethnic groups may also vary in group toleration of drinking; for example, drinking levels are often high in Mexican American

families because drinking — at least among men — is tolerated and heavy drinkers are protected by the family.

Casefinding and diagnosis — A major limiting factor in the diagnosis of female alcoholcs was reported to be physician reluctance to diagnose alcoholism. Many physicians are likely to diagnose anxiety, depression, or a nervous breakdown, rather than recognize and state the existence of alcoholism. It was believed that this is partly due to lack of physician knowledge about alcoholism and its symptoms, but also reflects a desire to avoid confronting the patient. Some doctors fear that confrontation will lead the patient to change doctors rather than seek treatment.

A particularly serious consequence of physician reluctance to diagnose and treat alcoholism is the frequent prescribing of sedatives to women who have a drinking problem — thus leading to the very serious problems caused by mixing alcohol and diazepam or other drugs.

Casefinding using the lay referral system in a community was suggested, including use of the church and extended family for ethnic groups such as Hispanics. This may require some education, particularly for groups with a high group tolerance of heavy drinking.

Treatment and Rehabilitation — It was recommended by several participants that treatment and research be meshed, so that research reflects actual treatment experience and treatment can be improved, using the results of directly relevant research. The need for studies of treatment efficacy, differentiating treatment modalities and client subgroups, was also stressed. It is believed that different subgroups have different treatment needs, but they do not necessarily receive different treatment. One important area of study is the role of the therapist. A San Antonio program was described which categorizes its new Mexican American clients, based on the extent of their acculturation and their fluency in English versus Spanish, and then assigns a therapist able to work successfully with this kind of client. Such client-therapist matching is believed important and worthy of study. Importance of the sex and the sex-role attitudes of the therapist should also be investigated.

Study of the recovery process, from the view of the patient and relevant others, was recommended. A particular concern is how a woman reduces stigma in recovery.

Estrogen therapy — The possibility of the use of estrogen in the treatment of female alcoholics who also show depressive symptoms was raised, and Dr. Edward Klaiber, who does biochemical-hormonal research on mental illness at the Worcester Foundation

for Experimental Biology, was asked to discuss this issue. Dr. Klaiber explained his concern for continuing to look for a biological phenomenon which may cause or contribute to depression or secondary alcoholism involving depression. The depression hypothesis states that reduced levels of neurotransmission (passages of neural messages from one nerve cell to another via chemical transmitters called neurotransmitters), or a deficiency in this neurotransmission mechanism, may affect mood, leading to depression. The enzyme MAO (monoamine oxidase) is known to inactivate the neurotransmitters. Among the early agents used to treat depression were the MAO (monoamine oxidase) inhibitors, agents that increase levels of neurotransmission by inhibiting the action of the enzyme MAO. What has been lacking is evidence of biological abnormalities in women or men which would explain their decreased rates of neurotransmission.

In 1971, several groups found elevated MAO levels in depressed women. Dr. Klaiber's group found that if they gave estrogen to such a group of depressed women, MAO levels came down and in some cases there was improvement in depressive symptoms. The discovery was made in a small pilot study without adequate controls and was therefore of limited significance. Funding was obtained for a double-blind study of a small group of pre- and postmenopausal inpatient women with a long history of therapy-resistant depression. They were found to have high MAO levels. Half received estrogen therapy; 65 percent of this group did show a significant drop in their ratings of depression using the Hamilton scale. No difference within this small group was found between pre- and postmenopausal women; less improvement was found in women over 40 and among the women who had been ill the longest. Women who did respond to estrogen often said that the times when they had been least depressed in their lives were when they were pregnant. The significance of this preliminary information is not yet clear.

Investigation was done to determine whether these women had hormonal abnormalities. It was found that both pre- and postmenopausal women had elevated levels of blood estrogen. Normal production of estrogen was found, but the women did not seem to be able to clear it from the bloodstream. This may mean that such women are not able to utilize estrogen in the same way as normal women. It was also found that premenopausal women made three to four times the normal amount of testosterone. The importance of this finding is not yet known.

Women with certain kinds of female problems seem to have high alcoholic consumption, e.g., women who have problems with

conception, hysterectomies, or menstrual irregularities, and alcoholic women have been found to have breast atrophy. Pregnancy also seems to decrease alcohol consumption in regularly drinking women. Animal studies have found that administration of estrogen decreases alcohol intake in rats. This information suggests the possibility of some link between alcoholism and gynecological problems, although the existence and nature of the link certainly have not been established.

The significance of the available information thus is not yet clear. The value of estrogen therapy cannot be established at this time. But it appears that further research on biochemical and hormonal factors related to female alcoholism is needed, along with research in psychosocial and other areas.

Treatment Constraints for Minority Women: Discussion

Discussion Leaders: Eileen Corrigan, D.S.W.
Ana Rivera, M.S.W.

An informal discussion was led by Dr. Eileen Corrigan and Ms. Ana Rivera regarding alcohol use and problems and minority groups. A working definition of minority groups was established as those who have physical and/or cultural differences and who perceive themselves as being discriminated against. The discussion focused on the drinking practices of, and treatment constraints for, black and Hispanic women. The discussion emphasized the lack of available data on minority women and alcohol use and the difficulty of getting minority women into treatment.

Hispanic Women—There is little data regarding the rates of problem drinking and alcoholism among the female Hispanic population. A great stigma is attached to alcoholism among Hispanic women, and problem drinkers are likely to be hidden and protected by their families to avoid loss of face. When she recognizes that there is a problem, the Hispanic woman tends to go to a priest or faith healer to receive counseling and treatment. In this way, the woman is sure that the problem is kept confidential and, at the same time, she ensures that the treatment is culturally appropriate.

Black Women—Data on alcohol use and problem drinking among black women are beginning to be available but are limited. Dr. Corrigan reported some initial findings from a study she conducted on black women in treatment. Among black women, there is a large proportion of abstainers as well as a large proportion of heavy drinkers. There is little difference between black and white women in most treatment variables, except for socioeconomic status (there are more low-income black women in treatment), tranquilizer use (fewer black women use tranquilizers), and treatment history (few black women indicate a history of prior treatment). Although black women tend to stay in treatment longer, the treatment outcome is generally poorer for black women than it is for white women.

Long-term Treatment—Long-term treatment is not necessarily an indication of progress in treatment. The discussion centered around the need for determining the significance of long-term treatment. Some discussants felt that minority-group females tend to use the treatment center as a site for socializing and companionship, and studies that measure this use of treatment facilities are needed.

Outreach Efforts—The discussion focused on whether outreach efforts could be improved by using staff who are racially or culturally similar to the target populations. No consensus was reached. Some participants felt that a potential client may be suspicious or reticent about meeting with a white therapist or outreach worker; others felt that race/ethnicity do not matter if the staff member is sensitive and caring.

Treatment Modalities—Treatment sites and modalities must be appropriate for the target clients. Research must be done on minority groups to determine the most effective methods of treatment. For instance, the Hispanic population believes that alcoholism is a health problem, and the disease model of alcoholism would therefore be useful when dealing with Hispanic women. Location of the treatment facility is important, too. Black women do not want—or cannot afford the time or money—to leave their communities to receive treatment, and clinics must be set up within black communities. Hispanic women do not want people in the community to know about their health-related problems and would respond better to clinics outside their communities.

Recommendations—Throughout the discussion, participants made recommendations concerning research on minority women. These recommendations include the following:

- More research is needed on all minority groups, especially Hispanic groups and the many Hispanic subpopulations;
- More research is needed on the effects of different treatment modalities and therapies on different subgroups and the significance of long-term treatment;
- Research instruments must be made appropriate for specific subgroups;
- Alcohol-related prevention and education materials must be made appropriate for specific subgroups;
- Experimental treatment centers with an evaluative research component built in would facilitate studies on minority groups; and
- More women researchers (particularly minority women) are needed in the area of alcohol studies.

Research Issues and Recommendations

Work Session Coordinator: Edith Gomberg, Ph.D.

1. Research and develop improved casefinding techniques for women. Study the impact of the target groups around the woman: the family, occupational groups (i.e., lawyers, doctors), women's organizations, and minority group organizations.
2. In implementing prevention and intervention activities, research the effectiveness of various media techniques and the use of special techniques for particular subgroups.
3. Integrate research with treatment in treatment centers, following the Addiction Research Foundation model.
4. Research treatment methods to determine how to better match treatment modalities with appropriate target subgroups.
5. Research alternative treatment modalities (for instance, study the relative effectiveness of all women group therapy as compared to mixed sex group therapy).
6. Research effectiveness of therapy based on therapist variables, such as sex, modality used, training, etc.
7. Research the role and impact of significant others on the client's referral, treatment, and rehabilitation.
8. Research the biological effects of alcohol on women and the implications for potential treatment methods.
9. Research the woman alcoholic/alcohol abuser's history and drinking career through record-gathering and data-collection techniques.
10. Study the recovery process to determine efficacy of particular components in reaching particular groups. This includes the study of changes in family configurations, problemsolving ability changes, human interactional changes, etc., and their relationship to the recovery process.
11. While maintaining the necessary scientific objectivity in the

study, researchers should be trained to be sensitive to, and protective of, human subjects.

12. Improve instrumentation: screening tests, outcome studies, research tools, etc.
13. NIAAA should fund a clinical/treatment/research center where researchers from varied disciplines can utilize a wide spectrum of research approaches in design and data collection (participant-observation, interviews, tests, questionnaires, etc.).

316-863 0 - 80 - 12

V. Prevention and Education Research

Introduction: Current Status and Research Needs

Sharon C. Wilsnack, Ph.D.

When the organizers of this conference asked me to prepare a paper on alcohol education and prevention for women, they indicated that this might be one of the most difficult topic papers to prepare. In one sense they were wrong: The very limited number of education and prevention programs targeted specifically at women could make my "state of the art" review quite brief (in fact, the bibliography prepared for me by CONSAD contained only seven items). In another sense, however, they were right: In the absence of prevention activities designed especially for women, we could draw on the entire extensive and growing literature on prevention in general (in both the alcohol problems area and other health and social problems areas). We could also draw on the entire body of research on women and alcohol, since any findings about causal influences on women's drinking have potential implications for preventing drinking problems in women.

Although I cannot review the existing prevention literature in depth in a paper of this length, I will attempt to present an overview of some general issues in prevention programing and some specific strategies which have been proposed for the prevention or reduction of alcohol problems. The paper begins with a definition of prevention and a discussion of what is to be prevented. After discussing specific prevention strategies, their potential usefulness for women, and some gaps in our knowledge about preventing alcohol problems in women, the paper concludes with a summary of recommendations for future research.

Prevention, in its broadest sense, is reducing the incidence, prevalence, and destructiveness of an illness or other disorder in a population (Caplan 1964). The traditional public health

Howard Blane, Barbara Najar, and Robin Room provided many published and unpublished materials used in the preparation of this paper.

model of prevention includes three levels at which problems can be prevented. *Primary prevention* attempts to reduce the number of new cases, or incidence, of a disorder; that is, to prevent the disorder from developing in the first place. *Secondary prevention* attempts to reduce the number of existing cases, or prevalence, of the disorder through early case finding and early treatment. *Tertiary prevention* attempts to reduce the destructiveness and residual consequences of established cases of the disorder. Since tertiary prevention is essentially the treatment and rehabilitation of chronically ill or disordered individuals, the term "prevention" generally refers to primary and secondary prevention. Another paper prepared for this conference deals with research issues in the treatment of problem drinking women; my paper is confined for the most part to primary and secondary prevention.

Alcohol Problems in Women: Some Implications for Prevention

The first question which arises (or should arise) in thinking about prevention is "prevention of what?" Prevention programs in the alcohol area have traditionally focused on preventing alcoholism or alcohol abuse. Robin Room, in a series of provocative papers (1974, 1975, 1976, 1977), has argued for a redefinition of the target of prevention, from a narrow clinical focus on alcoholism to a broader concern for specific alcohol problems, in effect disaggregating alcoholism into the specific kinds of problems which it encompasses. This disaggregation approach to prevention takes account of the fact that people experience many different types of alcohol problems — health problems, job difficulties, interpersonal conflicts related to drinking, accidents and arrests, and others. Outside of clinical populations, these specific drinking-related problems show only modest interrelationships, so that having one type of problem does not necessarily mean having another. Thus, prevention efforts targeted to individuals with certain types of alcohol problems will not automatically reach persons with other types of alcohol problems, and programs designed to reduce one problem (e.g., drinking-driving fatalities) may have little impact on other problems (e.g., cirrhosis of the liver or job absenteeism). Room makes the point that since it is unlikely that alcohol problems can ever be completely eradicated, it is more appropriate to speak of reducing or minimizing various drinking-related problems than of preventing them.

The alcohol problems approach raises several questions about prevention programing for women. What *are* women's alcohol problems? To what extent are they the same as men's alcohol problems and to what extent do they differ? How are alcohol problems distributed across various subgroups of women? Is there any evidence that women are experiencing more, or different, alcohol problems now than in the past?

Some information on women's drinking problems is available from national population surveys conducted over the past 15 years (e.g., Cahalan et al. 1969; Cahalan 1970). These surveys have measured the prevalence of problems of two major sorts: (1) various aspects of drinking behavior which indicate an actual or potential problem with alcohol (e.g., frequent intoxication, binge drinking); and (2) various problem consequences of drinking, including job problems, accidents and arrests, and problems with friends, neighbors, or relatives. In a 1967 national sample (Cahalan 1970), men reported a higher incidence of all drinking problems measured, although a surprising 21 percent of women (43 percent of men) reported having had at least one drinking-related problem in the past 3 years. The drinking problems reported most frequently by women were psychological dependence on alcohol, symptomatic drinking (behaviors suggestive of gamma alcoholism, such as morning drinking or loss of control), health problems, and belligerence after drinking. Subsequent surveys conducted in 1969 and 1973 (Cahalan and Room 1974; Cahalan and Roizen 1974) included only men, so recent information on drinking problems and their correlates is somewhat more limited for women than for men.

One question with regard to past drinking surveys is how much we can trust women's self-reports of their drinking-related problems. A curious finding from the 1967 national survey (Cahalan 1970) is that less than one-quarter of women rated as having "severe involvement with alcohol" reported drinking-related problems with spouses and relatives (often considered a typically feminine type of drinking problem; see Hoffman and Noem 1975), as contrasted with more than one-half of men with severe alcohol involvement. A similar finding reported by Donovan and Jessor (in press) is that heavy-drinking adolescent girls in a national teenage sample reported fewer negative social consequences of their drinking than did heavy-drinking boys. The reasons for these sex differences may be partly methodological, in that women may be more likely than men to deny problem consequences of drinking, particularly when questioned by men (Cahalan, et al 1969) or authority figures (Rachal et al. 1975). If so, it will be

important to develop measures and procedures which can increase the valid disclosure of sensitive information by women. If the sex differences reflect an actual tendency for society to react less severely to women's drinking than to men's (a possibility which violates much current thought about women and alcohol), this pattern might have important implications for preventing women's alcohol problems, a topic which I discuss later in the paper.

A second question about previous surveys is whether they have adequately covered the full range of women's alcohol problems. Several of the drinking problems included in earlier surveys have been characteristically masculine problems (e.g., arrests, job problems, financial difficulties), or at least problems for which women in traditional female roles are not generally eligible. In addition, certain aspects of drinking problems that may be particularly important to women have sometimes been overlooked. For example, measures of job problems have not included questions about the effects of drinking on housewives' ability to perform their domestic responsibilities, and measures of problems with spouse and relatives have apparently not included specific questions about drinking-related problems with children. Finally, women may experience drinking-related problems not addressed at all in previous surveys. The fetal alcohol syndrome has been largely overlooked until very recently, as have problems related to alcohol/drug interactions and the effects of maternal alcohol abuse on children's psychological and social development. Women may also experience some alcohol problems as the result of *others'* drinking rather than their own, for example, rape or other physical abuse. In short, women appear to experience a broader range of alcohol problems than previous surveys have been able to measure. In order to develop prevention strategies for the full range of women's alcohol problems, future surveys should include measures which are sensitive to the types, and aspects, of drinking problems which may be particularly important for women.

Although population surveys have included women from all major demographic subgroups (e.g., based on age, socioeconomic status, ethnicity, etc.), the relatively small number of women problem drinkers in most surveys has made it difficult to examine possible differences in women's drinking problems across various subgroups. Clinical studies have paid even less attention to subgroups of women drinkers. Most clinical studies of alcoholic women have used predominately white middle-class samples (Schuckit and Morrissey 1976), and thus the picture of the typical alcoholic woman which emerges from these studies (late onset of

drinking, rapid development of drinking problems, minimal visible social consequences of drinking) may not apply as well to women of other socioeconomic or ethnic backgrounds. Other characteristics likely to influence the types of alcohol problems women develop include age, marital status, employment status, family history of alcoholism and mental disorder, and sexual orientation (see Bromet and Moos 1976; Schuckit and Morrissey 1976; Wilsnack 1977). Various subgroups of women may develop different types of alcohol problems, with different developmental courses, requiring different prevention strategies. For example, different prevention strategies might be required for young women of lower socioeconomic status whose heavy drinking begins gradually in the absence of any particular environmental stress, as contrasted with older women of higher socioeconomic status whose drinking becomes heavy only after encountering a life crisis or unusual life stress.

In order to plan comprehensive prevention programs for women, then, we need to learn more about the nature of women's alcohol problems. In particular, we need to study the distribution and correlates of various types of alcohol problems within different demographic subgroups, using measures which maximize valid self-reports across the full range of women's alcohol problems.

As we learn more about the variety and distribution of women's alcohol problems, specific prevention strategies must be selected or developed to minimize these problems. Seven types of prevention strategies and their potential usefulness in reducing or minimizing alcohol problems in women are discussed in the following section.

Strategies for the Prevention of Alcohol Problems

Since the repeal of Prohibition, most prevention efforts in this country have tried to reduce alcohol problems by persuading the individual drinker to change his or her behavior, typically through education or criminal sanctions. Recently, however, several writers have questioned the adequacy of prevention strategies aimed solely at the individual and have argued that these need to be supplemented with strategies which alter the environment in which drinking takes place. Gusfield (in press) calls these two approaches to prevention "individualistic" and "situational" strategies. In a similar vein, Room (1974, 1975, 1976) distin-

guishes three possible goals of prevention: (1) altering individual drinking behavior and accompanying problematic behavior; (2) changing social reactions to drinking and accompanying behaviors; and (3) insulating drinking behavior from its potential negative consequences. Within these broad approaches to prevention a number of specific strategies have been proposed. I will discuss seven categories of strategies identified by an international panel of prevention experts (Bruun et al. 1975) and suggest some areas of needed research for determining the strategies' effectiveness with women. The strategies are arranged roughly along a continuum ranging from predominantly "individualistic" strategies focused on changing individual drinking behavior to predominantly "situational" strategies which attempt to alter the conditions under which people can drink or act after drinking.

Altering Individual Drinking Behavior Through Education and Persuasion

Attempts to persuade individuals to change their drinking behavior through education and public information have played a prominent role in the alcohol problems prevention area, although few of these efforts have focused specifically on women. Education efforts can be divided into two broad classes: (1) youth education programs and (2) mass communication and public education. These two approaches are discussed below, with some additional comments on the effects of alcohol advertising on women and an example of an education program developed especially for women.

Youth Education Programs. Alcohol education has been legally mandated in public schools since the era of Prohibition, although its effectiveness has been challenged by a number of critics. Three recent reviews (Blane 1976*a*; Goodstadt 1976; Milgram 1976) criticized school-based alcohol education programs on a variety of grounds, including their diffuse and sometimes conflicting goals, vague content, and failure to demonstrate impact on drinking behavior.

In the past few years, however, a number of innovative youth education programs have been proposed or undertaken, many of them supported by the NIAAA Division of Prevention. These include school-based and out-of-school programs for elementary and secondary school youth (Hubbard 1978), as well as programs specially designed for college student populations (see NIAAA 1976). In general, these programs have moved away from a narrow focus on alcohol alone to a broader view of drinking as one of many developmental issues and decisions facing young people. The

programs have specified goals and target groups more clearly than previous efforts, have placed greater emphasis on developing community support and involvement, and have included stronger evaluation components (Blane 1976*d*).

To my knowledge few, if any, youth education programs have focused specifically on girls or taken into account possible sex differences in youthful drinking. For example, the finding that parents and peers may exert relatively greater influence on girls' drinking than boys' (Margulies et al. 1977; Rachal et al. 1975), or the possibility that some girls may use drinking to symbolize rejection of traditional female roles (Wilsnack and Wilsnack 1977) might form the basis of prevention messages with particular relevance to girls. A thorough search of the available literature on youthful drinking might indicate additional characteristics of girls' and young women's drinking which have potential implications for youth education programing.

Mass Communication and Public Education. A great amount of effort and money is invested by public and voluntary organizations on mass media campaigns designed to change knowledge, attitudes, and behavior related to alcohol. A recent review of these efforts (Blane and Hewitt 1977) finds that only a few public education campaigns have included adequate evaluations and that the results of these evaluations indicate only modest success. Other writers (e.g., Cahalan 1975) have suggested that the limited success of mass education programs may be attributed to the lack of personal involvement and personal commitment demanded by these types of strategies.

Recent evidence from other areas of health education suggests that mass media campaigns may be most effective when combined with intensive interpersonal communication. In a study of three California communities (Maccoby and Farquhar 1975) a media campaign coupled with intensive individual instruction was more successful than a media campaign alone in reducing high-risk behaviors (e.g., smoking; high cholesterol diet) among individuals at risk for coronary heart disease. It seems possible that interpersonal communication or instruction might be even more important to women than to men, in view of the value traditionally placed by women on interpersonal relationships, although this did not appear to be so in Maccoby and Farquhar's study. In any case, strategies which combine interpersonal communication with mass media presentations may have promise for the alcohol problems area, and demonstration projects testing such strategies should be supported.

Although NIAAA and the National Council on Alcoholism

have recently developed public service advertisements and printed material specially designed for women, many public education programs still have a "distinctively masculine orientation" (e.g., radio spots featuring well-known sports personalities) and "tend to appeal to and feature white adult males" (Blane and Hewitt 1977, pp. 7, 14). Such messages might be expected to be less effective in influencing women than men, although evaluative data on this point are lacking. As an aid in planning future public education campaigns, NIAAA might wish to support a study to determine the effects on women of viewing media presentations with male versus female identification figures.

Advertising and Media Portrayal of Alcohol. Any discussion of mass communications and alcohol should consider the role of advertising and media portrayal of alcohol in *promoting* alcohol consumption. The distilled spirits industry has targeted women as one of five high-priority submarkets (Gavin-Jobson Associates 1975), and advertising geared to women has increased noticeably in recent years. For example, Blane and Hewitt (1977) note that liquor and wine advertising in *Glamour* magazine rose from 3 to 61 pages annually between 1970 and 1974. A similar increase in cigarette advertising aimed at women has occurred in recent years, much of it stressing smoking as a symbol of liberation ("You've come a long way, baby"). Smoking among women has increased during this period while decreasing somewhat in men (Horn 1977).

It is unclear whether advertising can actually create new markets, such as women, or whether it simply capitalizes on groups which would have become consumers in any case (Blane and Hewitt 1977). However, even if its causal role in increasing alcohol consumption is not clear, it appears that advertising can reinforce and maintain heavy drinking patterns (Gusfield, in press). If women on the average are more susceptible to certain types of social influence than men (Allen 1970), it may be particularly important to study the effects of advertising on women's alcohol consumption. Research might examine the influence of advertising on new women drinkers as contrasted with women with established drinking habits, its effects on women with different levels of consumption (e.g., abstainers, light or moderate drinkers, heavy drinkers), and the impact of various types of advertising messages (e.g., ads associating drinking with sophistication, liberation, sexuality, etc.) on various types of women (e.g., younger versus older, traditional versus nontraditional).

In addition to advertising, the portrayal of drinking in popular

literature, radio and television, and motion pictures may affect both women's alcohol consumption and the self-images of women with alcohol problems. Although concern is frequently expressed about the favorable light in which drinking is often portrayed, and about negative or stereotypic portrayals of women alcoholics, little empirical evidence is available to document frequency or effects of such portrayals.

The ADAMHA Women's Communications Project, a cooperative effort of NIAAA, NIDA, and NIMH, is currently summarizing research findings on alcohol, drug abuse, and mental health problems in women and is providing this information to television and film writers and producers (NIAAA Women's Task Force, n.d.). The goal is to reduce stereotypes and encourage more accurate media portrayals of women with alcohol, drug abuse, and mental health problems. The work of the Women's Communications Project should be carefully monitored. If the project succeeds in changing the portrayal of women's drinking and drinking problems in even a few television programs or movies, research could examine the effects of these changes on women viewers (e.g., on their attitudes toward drinking and problem drinking in women, on their own drinking behavior), and thus increase our understanding of media influence on women's drinking.

An Education Program for Women: NCAE's "Reflections in a Glass." While few public education programs have been aimed specifically at women, one exception is an alcohol education course developed by the National Center for Alcohol Education as part of its "Decisions and Drinking" series (NCAE 1977). Titled "Reflections in a Glass," the course is designed for adult women who are not experiencing drinking problems. Its purpose is to provide information and learning experiences which will allow women to first examine the role of alcohol in their lives and then make conscious personal decisions about drinking which reflect respect for themselves and others. Course content includes basic factual information about alcohol; alcohol's role in American history and women's history; motivations for drinking, high-risk groups, and times of special vulnerability; and issues related to drinking and driving, drinking and entertaining, and drinking and other drug use. Special attention is given to the sexual double standard of alcohol use and the conflicting cultural messages women receive regarding alcohol. The course is designed for presentation in eight weekly sessions to small groups of women (12-20 participants). It employs a range of methods — discussion, role playing, films,

games, and debates — and is meant to be conducted by a lay facilitator or educator, one of the members of the group itself. The course has been field tested with women's groups in the Washington, D.C. area. Results indicated significant cognitive growth in a number of areas, although longer term effects on drinking bheavior were not assessed.

The course will soon be available from NCAE to women's groups throughout the country. Nationwide distribution will provide an opportunity to evaluate the course's effectiveness with various groups of women, for example, women of different ethnic and socioeconomic backgrounds and women of differing degrees of sex role traditionality. The ways in which women are recruited for the course and the personal salience of drinking and drinking decisions for them are other variables likely to affect the course's effectiveness. In addition, it would be useful for planning future educational programs to evaluate the relative impact of the course's specialized "women's content" as compared with its more generic alcohol content. This could be accomplished fairly easily by systematically varying the course's general and women-specific modules across comparable groups of women.

Establishing Criminal Sanctions Against Undesirable Behavior Associated With Drinking

A second general strategy for reducing certain types of alcohol problems has been to pass laws against undesirable drinking behavior, particularly against public drinkenness and driving under the influence of alcohol, with criminal penalties for violators. In general, however, criminal sanctions have not been highly effective in reducing either public intoxication or drinking-driving casualties (Gusfield, in press; Zador 1976).

Women have traditionally been "protected" by law enforcement personnel and court officials, who have been less likely to arrest and convict women than men for drinking-related misconduct (e.g., Argeriou and Paulino 1976). Persuading law enforcement and judicial officials to enforce drinking-related laws equally for men and women might increase the usefulness of criminal sanctions as a means of reducing certain alcohol problems in women. (This might be particularly true with regard to DWI arrests as a form of early intervention.) However, in view of the rather modest success of criminal sanctions in general in reducing alcohol problems to date, eliminating the sexual double standard in law enforcement would not seem to be a particularly high priority strategy for reducing alcohol problems in women.

Treating and Rehabilitating Persons Who Have Drinking Problems

Treatment and rehabilitation programs have potentially important roles in prevention, in that they may be able to reduce the overall prevalence of alcohol problems in the population. A number of research gaps exist with regard to women in treatment, and these are discussed in another paper. While Blume's paper on treatment also deals with certain aspects of secondary prevention (i.e., early case finding and early intervention), at the risk of some overlap I would like to raise two issues related to secondary prevention of alcohol problems in women.

The first is simply a reminder that we need to be clear on what alcohol problems we are trying to prevent. Distributing brochures describing early warning signs of alcoholism has been a standard secondary prevention approach for many years. While such activities are probably helpful in getting early-stage alcoholics into treatment, they may have little effect on women experiencing certain other kinds of alcohol problems, e.g., the nonalcoholic woman who drinks too heavily in pregnancy, or the recently liberated woman whose lack of experience with night-time driving puts her at risk for an automobile accident after even moderate drinking at a party. As I proposed earlier, we need research to identify the types of alcohol problems which women experience and their prevalence, followed by carefully evaluated demonstration projects testing innovative strategies for reducing a variety of specific alcohol problems.

The second issue concerns the phenomenon of "hidden alcoholism" in women. Although many women (and men) undoubtedly deny the extent of their drinking, and although women not employed outside the home have particular opportunities to engage in private drinking, it seems unlikely that the alcohol problems of many women are truly hidden. At least a few people — friends, family, physicians, clergy — are generally aware of the woman's problem and, in fact, frequently help to keep it hidden (Rubington 1973). The challenge is to discover who these significant others are (for what types of women with what types of alcohol problems) and what types of intervention strategies will help them to stop hiding the problem.

I am presently evaluating a neighborhood counseling program designed to increase the helping skills of women who serve as natural caregivers in the community. The women have received training in identification of alcohol problems (and a variety of other problems often associated with drinking problems), basic communication skills, problem-solving techniques, and community

referral resources. We are interested in whether this training increases the effectiveness of our neighborhood counselors (who were already playing important primary and secondary prevention roles for a variety of problems) in identifying, supporting, and referring women with alcohol problems. In addition to various natural support systems in the community, such as the neighborhood counselors I have described, other groups in strategic locations for helping the hidden alcoholic woman are men (as husbands, friends, co-workers), other women (as friends, relatives, co-workers), employers, and various community gatekeepers (physicians, clergy, beauticians, school counselors, etc.). Carefully evaluated approaches for reaching these groups may yield more effective early intervention with women problem drinkers, as well as a greater understanding of the role of various significant others in producing, maintaining, and preventing women's alcohol problems.

Controlling the Availability of Alcohol

Prevention strategies in the preceding three groups attempt to directly alter an individual's desire or predisposition to drink — through education, criminal sanctions, or rehabilitation. Strategies in the fourth group, in contrast, focus on an important feature of the drinker's environment: the availability of alcohol. The strategies attempt to reduce alcohol consumption through such means as price controls and taxation, restricting sales outlets and distribution, and regulating days and hours of sale. Of these strategies, price controls appear the most likely to have significant impact on consumption levels (Blane 1976*b*).

Studies conducted in France and Canada over the past 15 years indicate a relationship between overall levels of alcohol consumption in a population, rates of heavy drinking, and the prevalence of serious health consequences, such as cirrhosis of the liver (Bruun et al. 1975; Popham et al. 1971). These studies have formed the basis of the "distribution of consumption" model of prevention (see Parker and Harman 1978; Schmidt and Popham 1978), which argues that alcohol problems can be reduced by reducing per capita alcohol consumption through legal and social controls, such as price controls. The distribution of consumption model has been the subject of considerable discussion in recent years. Major criticisms of the model have included methodological criticisms of the research on which the model is based, substantive criticisms of some of the model's assumptions (e.g., that reducing per capita consumption will reduce consumption at all drinking levels), conceptual criticisms of the model's primary focus on health conse-

quences rather than other alcohol problems, and practical concerns about a variety of possible unintended consequences of alcohol price controls, e.g., increases in binge drinking, increased illegal production of alcoholic beverages, and heightened ambivalence about drinking (see Miller and Agnew 1974; Parker and Harman 1977, 1978; Schmidt and Popham 1978).

With a few exceptions, studies on which the distribution of consumption model is based have ignored or minimized differences in alcohol consumption patterns across various population subgroups (e.g., men vs. women). The general assumption seems to be that reducing or stabilizing consumption in a population will have a beneficial effect on the entire population; little attention is given to the possibility that this effect may not be equally beneficial for all subgroups. With regard to women, some data (see Skog 1977) suggest that, because of the smaller proportion of women who are heavy drinkers, stabilizing or reducing per capita alcohol consumption may have less effect on heavy drinking among women than among men.

Possible sex differences in the impact of strategies to control the availability of alcohol do not negate the potential usefulness of such strategies as part of a comprehensive prevention approach. However, further research attention to such sex differences would seem important in predicting the likely long-term effect on women of instituting large-scale control measures and in evaluating the cost effectiveness of such strategies in reducing women's alcohol problems.

Altering the Environment and Context for Drinking

While the availability of alcohol is one important feature of a drinker's environment, other environmental characteristics may be equally important in influencing the amount and consequences of drinking. A fifth group of prevention strategies attempts to alter conditions in the physical or social environment which contribute to drinking problems and to develop recreational and coping alternatives to drinking.

Drinking contexts and their effects on drinking behavior have received increased attention in the recent research literature (e.g., Harford 1977; Kotarba 1977). An analysis of survey data gathered over the past 15 years (Clark 1977) indicates consistently strong relationships between drinking settings (e.g., homes, friends' homes, bars and restaurants) and drinking behavior, although the direction of causality is often unclear. That is, it is difficult to determine to what extent various drinking settings elicit and reinforce certain levels and consequences of drinking and to what

316-863 O - 80 - 13

extent drinkers self-select themselves into settings compatible with their own preferred style of drinking. In addition, survey data have limited usefulness in understanding the processes by which drinking settings may influence drinking behavior and its consequences.

Women have traditionally preferred to drink in relatively private settings — at home or in friends' homes, with family and friends. Across all ages and levels of alcohol consumption, considerably fewer women than men drink in the most visible public setting — bars or taverns (Clark 1977). It is possible that increasingly permissive attitudes toward women's drinking, together with other changes in women's roles, may produce a shift in women's drinking contexts toward more public settings, such as individual or group drinking in taverns and bars. The effects of such a shift, if it occurs, are far from clear, but might include some increase in visible social consequences of women's drinking, such as accidents or arrests. Continued research on the role of drinking contexts in producing and maintaining alcohol problems is important for both men and women. We need to find out to what extent the social contexts of women's drinking are changing and how these changes are affecting women's drinking behavior. A better understanding of women's drinking contexts might suggest ways of altering drinking environments so as to minimize problem consequences of drinking and, perhaps, ways of influencing public perceptions of appropriate or desirable drinking contexts.

One important feature of women's drinking contexts is the drinking behavior of their significant others. Previous research indicates that alcoholic women are more likely than nonalcoholic women to have an alcoholic parent, particularly an alcoholic father (e.g., Winokur and Clayton 1968) and to be married to a heavy-drinking or alcoholic husband (Kinsey 1966; Lisansky 1957). Modeling influences, availability of alcohol, social pressure to drink, and interpersonal stress (often including physical and emotional abuse) can combine to increase the likelihood of a woman's developing alcohol problems under these circumstances or to decrease her ability to overcome alcohol problems which have already developed. One implication for prevention is obvious: Any intervention which can reduce alcohol problems in men may help to prevent similar problems in their daughters and wives. The reverse may also be true. Further research is needed on the effects of significant others' heavy drinking on women's drinking problems and on ways of aiding women to either escape or insulate themselves from these effects.

As one way of creating more favorable environments for women, several writers (e.g., Sandmaier 1976) have proposed that

women's support groups or consciousness-raising groups may have a role in preventing alcohol problems in women. In addition to providing a more supportive environment than many women normally experience, women's groups are seen as potentially being able to alter some of the conditions believed to contribute to alcohol abuse in women (e.g., low self-esteem, lack of self-actualization due to sex role constraints). Although consciousness-raising groups are being used in a number of alcoholism treatment programs (e.g., Hamilton 1977; Sandmaier 1977) and in several prevention programs around the country (Sandmaier 1976), little information is available on their effectiveness. Controlled studies are needed to test the effects of such groups on women's self-concepts, sex-role flexibility, and self-actualization and their longer-term effects on the development of alcohol problems. Studies would need to take into account a number of potentially relevant variables, including group structure and leadership, group composition, and group content and process. In addition to evaluating women's groups as components of formal prevention or treatment programs, it would be of interest to study the role of various women's groups in the community as naturally occurring primary prevention mechanisms.

Finally, a variety of prevention strategies are possible which attempt to alter the underlying causes of various alcohol problems. For example, assertiveness training groups might be proposed if one believes that lack of assertiveness contributes to excessive drinking in women, or instruction in yoga or transcendental meditation, if stress and anxiety are viewed as underlying causes. Despite some progress in understanding factors which contribute to women's alcohol problems (see Gomberg's paper for this conference), we are a long way from having proved any particular theory of women's drinking. As Room (1976) indicates, the tentative nature of our knowledge requires that any prevention strategy aimed at underlying causes be "treated as modest scope pilot projects and stringently evaluated in terms of the effects on drinking patterns and problems" (p. 17).

One factor believed by some to contribute to women's alcohol problems is stress and conflict related to traditional sex roles (e.g., Wilsnack 1976). If some women drink partly as the result of narrow and confining sex roles, then the women's movement and accompanying changes in sex roles may help to reduce women's alcohol problems. However, while a reduction in alcohol problems may be achieved through women's greater opportunities for choice and self-actualization, the women's movement might have other effects as well, e.g., increased drinking due to more permissive

norms and increased drinking opportunities, or increased drinking problems due to greater occupational stress and the demands of multiple roles. The natural experiment presently occurring with regard to women's roles and lifestyles offers a chance to learn more about the effects of sex role expectations and sex role performance on women's drinking and drinking problems. Cross-sectional and longitudinal studies during this period of social change should help to clarify what, if any, role the weakening of sex role constraints and the adoption of new social roles will have in preventing or reducing women's alcohol problems.

Altering Social Responses to Drinking

A sixth group of prevention strategies consists of efforts to affect social norms and values which (1) influence the drinking decisions of individual members of the social group and (2) define acceptable and unacceptable drinking behavior and social responses to unacceptable behavior.

Any prevention strategy designed to influence prevailing social norms about drinking must take into account the cultural mixed messages women receive about alcohol. On the one hand, drinking and drunkenness traditionally have not been sanctioned for women, perhaps because they seem to threaten the successful performance of traditional wife-mother roles (Knupfer 1964); on the other hand, for many women, drinking may have positive connotations of sophistication, maturity, independence, and freedom from traditional sex role constraints (Curlee 1967). These conflicting messages may produce the type of ambivalence about alcohol which many authorities believe contributes to alcohol problems (e.g., Wilkinson 1970). As a prerequisite to trying to alter existing drinking norms, we need to study (through surveys or analysis of media messages) the various cultural messages women receive about alcohol, the degree to which the messages conflict, and the effects of conflicting messages on women's drinking and drinking problems. If conflicting beliefs about alcohol are strongly related to alcohol problems in women, education programs might be developed which attempt to alter the sexual double standard of drinking, as well as programs designed to help women clarify and resist the conflicting messages they receive.

In addition to altering social norms which define appropriate drinking behavior for women, prevention programs can try to change social responses to women with actual or potential drinking problems. Traditionally, the emphasis of such strategies has been on increasing social reaction to drinking behavior, redefining previously tolerated behavior as no longer acceptable, and bringing

pressure to bear on the drinker to alter his or her behavior (Room 1975). Examples of such strategies include training community gatekeepers to identify and refer hidden alcoholics and highway safety campaigns (e.g., the "Scream bloody murder" series) designed to encourage harsher penalties for DWI offenders.

As an alternative to increasing the social reaction to drinking, which generally increases socially visible alcohol problems (e.g., alcoholics in treatment, DWI offenders in court) at least in the short run, Room (1975) has proposed that some alcohol problems might be reduced by decreasing the social reaction. For example, a traditionally oriented man who believes women should not drink might be desensitized to his wife's occasional cocktail, thus reducing the specific alcohol problem of drinking-related marital conflict. As Room notes, such strategies would need to be carefully evaluated since short-term gains from the de-emphasis of certain alcohol problems might be offset by long-term increases in other problems (e.g., health problems or alcohol dependence).

Most writers on women and alcohol stress that the social stigma of alcohol problems is greater for women than men and that society reacts more harshly and punitively toward the problem drinking woman than toward her male counterpart (Beckman 1975; Curlee 1967; Gomberg 1974, 1976). Although both women and men problem drinkers are clearly objects of social disapproval and rejection (see Stafford and Petway 1977), several recent findings question whether society necessarily reacts more harshly to women. In a study of college undergraduates and a smaller nonstudent adult sample, Stafford and Petway (1977) found no differences between evaluative semantic differential ratings of an alcoholic woman and an alcoholic man, nor between evaluative ratings of a drunk woman and a drunk man. As mentioned earlier, Cahalan (1970) found that women problem drinkers reported fewer problems with spouses and relatives than did men problem drinkers, and Donovan and Jessor (in press) found that heavy drinking adolescent girls reported fewer negative social consequences than equally heavy drinking adolescent boys. These findings suggest that, although the woman problem drinker may experience considerable shame and guilt, the social reaction to her may be more one of denial, protection, and pity than one of overt punishment and hostility. While possibly reducing certain alcohol problems in the short run (e.g., overt marital conflict), such denial and protection may serve to prolong a woman's heavy drinking and lead to more serious long-term consequences.

The findings just discussed suggest a need for more data on the actual social responses to women with various types of alcohol

problems and the effects of these responses. These data could come from population surveys as well as from smaller scale studies of problem drinking women and their significant others. If this research should find a general tendency toward cultural denial and de-emphasis of alcohol problems in women, prevention programs might be designed to sensitize rather than desensitize the public to women's drinking problems and to encourage early and caring confrontation of women with alcohol problems.

Separating Drinking From Its Potentially Harmful Consequences

In addition to changing individual drinking behavior (e.g., through education or criminal sanctions) and changing the physical or social environment in which drinking occurs, a third broad class of prevention strategies attempts to isolate drinking from its potentially negative consequences. Room (1975) describes three ways of insulating drinking behavior from potential problem consequences: (1) physical separation (e.g., zoning ordinances prohibiting taverns within certain distances of schools or churches); (2) cultural separation (e.g., police agreements to "look the other way" when college fraternities throw beer blasts); and (3) temporal separation (e.g., interlock devices which will not allow cars to operate when the driver is intoxicated, providing beds for guests to sleep over after a party, providing more flexible working hours to reduce Monday-morning absenteeism among workers who drink excessively on weekends). None of these measures directly addresses individual drinking behavior; rather they attempt to reduce or minimize its adverse effects.

For many problem drinking women (particularly middle-class and upper class women and women not employed outside the home), drinking has traditionally been relatively well insulated, in both a physical sense (e.g., drinking in the privacy of one's home) and a temporal sense (e.g., an opportunity to sober up before husband and children arrive home). There is some evidence that problem drinking women whose drinking is less well insulated (e.g., lower class women) show a corresponding increase in negative social consequences (Schuckit and Morrissey 1976). As increasing numbers of women enter the labor force and as women begin to drink in more visible public settings, strategies for insulating their drinking from potential adverse consequences may become increasingly important. As one example, if more women begin driving themselves home from parties or other drinking occasions, safety interlock systems to prevent drunken driving may assume added importance, since some evidence suggests

that women who drive after drinking are at high risk for accidents (Carlson 1972), possibly because of their relative lack of experience with drinking-and-driving. Research on innovative approaches to insulating drinking behavior should be supported; such research may be particularly important in preventing the development of new alcohol problems (such as DWI arrests and drinking-driving casualties) related to the expanding roles and activities of women.

Target Groups for Prevention: High-Risk Groups and Community Prevention

One approach to prevention is to identify groups of individuals at special risk for a disorder and intervene in such a way as to reduce these individuals' risks. Although considerably more research is needed to identify the full range of risk factors for alcohol problems in women, some high-risk groups can be specified with a reasonable degree of certainty. These include daughters of alcoholics, women experiencing life crises or transitions, depressed women, lesbians, female offenders and juvenile delinquent girls, women in military service, wives of alcoholics, pregnant heavy drinkers, and others (see Gomberg's paper on risk factors, p. 83). High priority should be given to research aimed at identifying additional biological, psychological, and sociocultural factors which increase women's risk for alcohol problems and to demonstration projects which test innovative strategies (e.g., support groups for women undergoing life crises or transitions) for preventing alcohol problems within high-risk groups.

A second approach to prevention argues that since many risk factors are unknown and since everyone is to some extent "at risk," prevention programing should be directed at entire populations or entire communities (see Davis 1976). Further, since alcohol problems are assumed to have multiple causes, such efforts must be comprehensive in nature, employing a range of specific strategies — education, provision of alternatives, social and legal action, etc. (In reality, of course, such approaches can be quite effectively combined with special interventions for high-risk groups.) The NIAAA Division of Prevention currently supports several such community prevention projects designed to test the effects of various combinations of prevention strategies. A quasi-experimental design is generally employed, comparing one or more experimental communities with a comparable control community which receives no intervention. To my knowledge,

none of these programs has had a specific focus on women's alcohol problems, nor has any particular attention been paid to the role of women or women's groups as community change agents. Useful information might be gained if applicants planning community prevention projects were encouraged to consider possible special needs related to women's alcohol problems in their communities and to explore possible sex differences in the effectiveness of various prevention strategies.

In addition, demonstration projects might explore the role of women as providers of prevention services. Cahalan and others have spoken of the need for a grass roots social movement around the prevention of alcohol problems, a movement which would provide the "person-to-person evangelizing that could crystallize the social norms which would enforce moderate drinking behavior on an informal, yet effective, peer-pressure basis" (Cahalan 1975, p. 26). Women played a vital role in the last social movement around alcohol — the temperance movement — and it is possible that women can again play this important grass roots role in a movement to reduce alcohol problems.

One way of involving large numbers of women in preventing alcohol problems would be to foster an alliance between the women's movement and the alcohol problems prevention movement. Room (1977) suggests that one area of mutual interest might be reducing the association between drinking and many types of business activities (e.g., the three-martini businessmen's lunch which often explicitly or implicitly excludes women). Other emphases of the women's movement also seem quite consistent with alcohol problems prevention interests; for example, the attempt of the women's health movement to provide women with the accurate information they need to make informed decisions about their bodies and their health, and the concern of the women's movement with such issues as rape, child abuse, and wife abuse.

In addition to the women's movement (and its submovements), a variety of other women's groups may have interests which overlap those of the alcohol problems prevention field. Some idea of the potential role which various women's groups might play in preventing alcohol problems might be gained by asking existing NIAAA-supported community prevention projects to describe the role, if any, of women's groups in promoting prevention activities within their communities. In addition, special demonstration grants might be funded to systematically test the effectiveness of various types of women's groups (e.g., movement versus nonmovement) as community prevention change agents. Further information could be gained from a systematic evaluation of the

activities and effects of one or more of the voluntary Task Forces on Women and Alcoholism currently operating under NCA sponsorship in some 50 States and communities.

Evaluation of Prevention Programs

This paper has identified a number of research gaps which might be addressed by small-scale prevention demonstration projects such as those currently funded by the NIAAA Division of Prevention. To be useful, such projects must be stringently evaluated to determine their impact on women's alcohol problems. However, evaluating prevention programs presents some special difficulties.

One difficulty relates to the criteria of success for prevention activities. By definition, total success of a prevention program would be the absence or elimination of the problem the program was designed to prevent. In reality, of course, success must almost always be measured by degrees of reduction of the target problem behaviors. To measure the reduction of alcohol problems, it is necessary to estimate the likely level of problems which would exist had no interventions been made, since alcohol problems might decrease even in the absence of a prevention program. As mentioned earlier, many prevention projects have used some form of a pretest-posttest control group design, comparing a target group or community which receives a prevention program with a group or community which receives no intervention. Frequently, however, random assignment to groups is not possible (most obviously in the case of community prevention programs), so selection bias is often a potential threat to the validity of the results.

A second problem is that the effects of prevention programs on the development of alcohol problems may not occur rapidly enough to be detected in the 2- or 3-year timeframe of most prevention projects. This is particularly the case in primary prevention programs with young people, where the effects of interventions with children or youth on their eventual development of alcohol problems may not be known for years. The usual solution is to measure changes in drinking-related knowledge, attitudes, and behavior (e.g., quantity/frequency of drinking) as short-term or intermediate indicators of program success. In some cases, changes in drinking behavior are not measured at all, due to methodological or practical difficulties (e.g., reservations about the validity of self-report, inability to follow up participants after an educational program or workshop), and evaluations

rely primarily on measures of knowledge and attitudes. Although much research and writing has been devoted to explicating the relationships among knowledge, attitudes, and behavior (see Goodstadt 1976, for a discussion of these issues with regard to alcohol and drug education), many questions remain about the strength of these relationships and the conditions under which they do and do not exist. In addition, relatively little is known about how short-term changes in knowledge, attitudes, or drinking behavior affect the long-term development of alcohol problems.

Other methodological problems which arise in evaluating prevention programs include the frequent need to rely on self-report of drinking and associated behaviors and the question of how well project results generalize to other geographic and cultural settings. (A current NIAAA grant program to replicate several successful youth education programs is one attempt to address the issue of generalizability.) In view of the many challenges facing evaluators of prevention programs, NIAAA might wish to support methodologically oriented evaluation research designed to test new concepts and new techniques for the evaluation of prevention programs, such as the recent study by an NIAAA grantee which related changes in various components of attitudes toward alcohol to changes in adolescent drinking behavior (Biron et al. 1977). In addition, manuals might be developed which describe relatively strong evaluation designs and discuss common methodological problems in evaluating prevention programs. Distributing these manuals to groups involved in prevention programing throughout the country might improve the overall quality of prevention program evaluation and thus increase the usefulness of information gained from the programs. Finally, NIAAA might consider the long-term funding of at least a few high-potential prevention demonstration projects so that better data could be obtained on relationships between short-term changes in knowledge, attitudes, and drinking behavior and longer term changes in drinking and drinking problems.

Recommendations for Future Research

A number of research needs have been suggested throughout this paper. The following research areas would seem to have the highest priority, based on the amount of prevention-relevant information they would yield and the importance of their results as a prerequisite to future prevention programing.

1. *Surveys of normal and problem drinking among women in the general population*, using measures and procedures which are sensitive to the special characteristics of women's drinking and employing samples which are large enough to allow analysis of differences in drinking and drinking problems across various subgroups of women. Such surveys could obtain a variety of data important to prevention, including information about women's alcohol consumption and its correlates, prevalence of specific alcohol problems in women, contexts of women's drinking, beliefs women hold about drinking, and social responses to drinking and drinking problems in women. Surveys should be longitudinal to permit analysis of changes in women's drinking and drinking problems over time, particularly as these relate to changes in women's roles and lifestyles.
2. *Research examining the strength of various social and cultural influences on women's drinking*, including social norms regarding women's drinking, alcoholic beverage advertising and media portrayal of alcohol, social contexts of drinking, and the role of significant others in producing, maintaining, and preventing women's alcohol problems. Data could be gathered through population surveys, communications research including content analysis, observational studies of drinking contexts, and interview or observational studies of problem-drinking women and their significant others. Research findings could form the basis of prevention programs to reduce or alter undesirable social or cultural influences; for example, education programs to help women resist cultural "mixed messages" about alcohol, intervention programs for women in heavy-drinking social environments (e.g., daughters or wives of alcoholics), programs to sensitize significant others to women's drinking problems.
3. *Carefully evaluated demonstration projects testing innovative prevention programs for high-risk groups of women*, e.g., providing education and support, or finding ways of strengthening natural support systems, for women experiencing life crises or transitions such as divorce or widowhood.
4. *Other demonstration projects testing innovative strategies for reducing specific alcohol problems in women*, e.g., drinking-driving casualties, heavy drinking in pregnancy, drinking-related relationship problems or family problems.
5. *Improved evaluation of existing prevention programs* through (1) methodological research to improve existing techniques

for evaluating prevention programs, and (2) dissemination of prevention evaluation techniques to prevention programs throughout the country. Present and future recipients of NIAAA prevention grants should be encouraged to give some attention to possible sex differences in prevention programing needs and to report any sex differences in the effectiveness of prevention activities.

Finally, the focus of this paper on some special issues in the prevention of alcohol problems in women should not obscure the importance of general prevention research which will affect men and women equally. As described earlier, a number of prevention strategies are currently being proposed and discussed, including various legal and social controls, environmental modifications to reduce alcohol problems, ways of insulating drinking from its potential problem consequences, and new approaches to education, mass communication, and community organization. Quality research and action projects in these areas should be supported in an attempt to discover new strategies, or combinations of strategies, which can effectively reduce alcohol problems in both women and men.

Discussion Summary

Discussion Leaders: Shirley Jessor, Ph.D.
Jessica Hill, M.A.

Ms. Hill commented on prevention research and policy issues from a social policy and programing perspective; she is Acting Regional Director of the Canadian Government's Non-Medical Use of Drugs Directorate. Ms. Hill noted that, in Canada, the research emphasis has been on epidemiology, dealing with morbidity and mortality and on surveys of use patterns. As in the United States, there are obvious research gaps in areas related to psychosocial consequences, etiology, and treatment modalities.

Ms. Hill suggested significant prevention issues and related them to Dr. Wilsnack's paper and to the Canadian experience. She suggested that it would be very valuable to measure the impact of community education campaigns involving mass media campaigns in combination with intensive interpersonal efforts such as counseling and group discussion around alcohol use. However, such study requires finding an isolated community, where residents are unlikely to use services outside the community. Impact could be determined through measuring changes in arrest rates for DWI and wife battery, etc., in relation to alcohol use. She described a closely related study of drug abuse on an Indian reservation in North Dakota. A combination of educational workshops for social workers and medical staff, public education, and individual counseling was used to discourage the use of tranquilizers and barbiturates. A reduction of about 30 percent in both use and prescribing was found, although changes were not followed over time to determine lasting impact. Such educational messages need to be repeated many times and followed up longitudinally.

Ms. Hill also noted that media advertising may not so much create markets as expand and legitimize drinking behavior in existing markets, for example by including women in lifestyle liquor ads and thereby seeking to remove the stigma from alcohol consumption by women. In Canada, lifestyle-type ads for alcohol have recently been prohibited, and the amount of advertising time on radio and television which is allowed for each brewery per week has also been limited. The impact of this legislation must be assessed.

316-863 0 - 80 - 14

The creation of stereotypic images by advertising was raised by Dr. Wilsnack. Ms. Hill noted that some advertisers, such as the pharmaceutical industry, have developed new markets among high-risk groups (such as women, the chronically ill, and the elderly) as markets for tranquilizers. It would be worth testing the impact of counter-educational campaigns, focusing on the use of community support systems and resources as an alternative to alcohol as a problem-solving measure. Several such campaigns have been carried out, but their impact — while it should not be minimized — has been hard to measure.

In regard to criminal sanctions, Ms. Hill felt that data suggest that such sanctions reduced driving while intoxicated (DWI) arrests in Sweden and Finland. Moreover, if women are treated differently by the criminal justice system (Dr. Wilsnack indicated that they are far less likely to be arrested for DWI), then this just delays their diagnosis and entry into treatment.

A major Canadian initiative involves trying to intervene in alcohol problems through educating physicians and other health professionals to respond to alcohol problems, using continuing and professional education. The availability issue is also of considerable importance in Canada. If we could determine the point at which consumption becomes physically or otherwise damaging, we could build in controls to limit availability. This is, of course, an extremely controversial issue.

Ms. Hill also described a primary prevention program in Ontario called "Community Response," which attempted to train people in the community who are often trusted with information about alcohol use — bartenders, hairdressers, and taxi drivers — to respond positively when people begin to share the problem and then to make appropriate referrals. The program appears promising, but it has been difficult to determine impact in a total demonstration period of 3 years. This suggests the need for longer funding for demonstration programs.

Ms. Hill expressed concern about the use of insulating measures, believing that rather than actually preventing negative consequences, the cycle might be one of drinking, followed by negative consequences, leading to the development of insulating measures, followed by drinking, and leading to the need for more insulating measures, etc.

Finally, Ms. Hill stressed the need for more evaluative research of primary and secondary prevention activities, an effort which requires considerable improvement in methodologies.

Following these comments, Dr. Jessor responded to the seven prevention approaches discussed by Dr. Wilsnack, then suggested

the value of a life cycle perspective on prevention of alcohol problems. She suggested a framework used by the Jessors in their tri-ethnic study of Hispanics, native Americans, and Anglos in a small community. The model considers the implications of socialization experiences, the sociocultural system, and personality for drinking behavior. All the components also affect each other.

Prevention can be viewed as including the whole timeline of the socialization experiences. One way of looking at prevention is to consider what we can do to prevent alcohol problems from the beginning, starting with assuring a healthy fetus (by preventing the fetal alcohol syndrome). Then prevention efforts can be considered at each stage of development: What can be done with children (pre-school and in-school), to socialize them and teach them how to drink. Studies of particular ethnic groups, such as Italians and Jews, suggest that certain kinds of socialization experiences insulate individuals from later drinking problems. Never drinking — which might seem to be the best insulation — is not, according to research. Dr. Jessor suggested a new look at some of these ethnic studies, to consider how socialization can provide insulation against problem drinking — through drinking with the family, making drinking a pleasant experience which does not end in drunkenness, drinking with meals, and making drinking part of a family or community ritual. Family prevention research along these lines was recommended.

Prevention approaches at later stages in the life cycle — for teenagers, young adults, middle-aged people, and older people — can be similarly suggested in terms of their relationship to socialization experiences. Dr. Jessor recommended specific research on the differences between family socialization of girls and boys regarding drinking.

The sociocultural system also affects drinking behavior, of course. The Jessors identified three structures within that system: The opportunity structure, the normative structure, and the social control structure. Individuals with limited opportunity are seen as particularly likely to engage in negative or illegitimate activity, such as alcoholism. Changing the opportunity structure — improving opportunities for those whose chances are now limited — thus becomes an important prevention strategy. With regard to the normative structure, when there is a lack of consensus concerning how to achieve valued goals, the control aspect of norms is weakened. Similarly, when social controls — including sanctions for problem drinking behavior and conditions limiting access to alcohol — are weakened, then problem behavior is more likely to occur. Thus efforts which strengthen social norms, increase con-

sensus, and strengthen the social control structure are likely to contribute to prevention of problem drinking behavior.

The importance of personality in affecting vulnerability to alcohol problems was discussed previously.

Because this theory helps explain drinking behavior, it also has implications for prevention.

During participant discussion, the following issues were stressed:

Leaderless groups — More research is needed on self-help and leaderless groups. Such groups can be very helpful to improve self-esteem and avoid the "sick" label, so may be particularly useful for intervention; and support groups dealing with alcohol problems might be encouraged. Consciousness-raising groups seem to have positive effects on the high-risk characteristics of members; research on changes in drinking behavior of group members should be carried out. Many of the principles of Alcoholics Anonymous might be applied to prevention as well as treatment, using leaderless groups.

Advertising — The liquor industry and the advertising industry have developed principles from which we should learn. They know their market and know how to research it. An interesting question is how the ambivalence created by counter-messages will affect drinking. Such messages need to counter myths; for example, alcohol will *not* make you sleep better.

Professional education — Since people seeking help with alcohol problems often go to either the health care industry or the clergy, it seems extremely important to educate them to deal with alcohol problems and to be able to intervene as early as possible.

Research Issues and Recommendations

Work Session Coordinator: Zoe Carrigan, Ph.D.

1. All research funded by NIAAA should record, analyze, and report data by gender and report differences in effectiveness of prevention strategies which are sex related.
2. Conduct surveys to provide baseline data for prevention programs in the areas of women's drinking practices, drinking contexts, and the social responses to female drinking problems.
3. Support methodologically oriented evaluation research concepts and techniques in order to improve existing methods for evaluating prevention programs.
4. Provide funds for prevention programs and strategies, whether funded by NIAAA, States, localities, or private organizations.
5. Support research on naturally occurring events, e.g., pregnancy and changes in drinking habits, in order to determine the factors involved in changing drinking behavior.
6. Conduct longitudinal studies of the effectiveness of youth prevention projects. Begin with youth prevention replication projects funded by NIAAA in order to create a data base for future research.
7. Evaluate professional training programs using outside evaluators, to determine the programs' effectiveness in changing professional behavior in the prevention of alcohol-related problems and the treatment of women with alcohol problems. These studies should use control groups of trained and untrained professionals.
8. Implement carefully constructed demonstration programs which utilize various media strategies (including counter advertising) plus other strategies.
9. Study the utilization of women's groups for prevention and intervention in changing alcohol behavior of members and in

affecting or changing the attitudes and behaviors of communities.

10. Evaluate disaggregation approaches to research by first identifying appropriate target subgroups as preliminary to studying the correlation of the subgroups to particular issues relating to alcohol and women.
11. Identify appropriate social contexts for drinking (i.e., bars, homes, work settings) for fuller exploration as preliminary to research on social contexts.
12. Evaluate the usefulness of criminal sanctions, with or without treatment programs, as to their benefit for women.

VI. Summary Recommendations

The following recommendations combine, integrate, and summarize the major recommendations included in workshop topic papers, developed by workshop participants during discussions, and prepared in the work sessions on the last day of the conference. Policy/administrative, methodological, and substantive recommendations are presented separately. Within subsections, the order of recommendations reflects a grouping of related issues and does not imply priority.

Policy/Administrative Recommendations

1. Reports and abstracts of all NIAAA-funded research projects should be required to specify in their titles whether the research involves men only, women only, or both men and women. The terms "alcoholic" and "alcoholism" should be reserved for research involving both men and women.
2. All NIAAA-funded research projects should be required to record, analyze, and report data separately by sex.
3. NIAAA should actively encourage increased and improved research on alcohol problems and alcoholism among women, through publicity and special funding. Grant application kits should include material encouraging potential grant applicants to carry out research on women and on mixed groups of men and women. Separate funds should be set aside for additional research on women, and funding of women's projects through existing grant categories should be increased.
4. NIAAA should fund an interdisciplinary research center to carry out and encourage research on alcohol problems and alcoholism among women, including research on proneness/vulnerability and etiology, biological and psychosocial consequences, clinical services, and prevention and education.
5. NIAAA should improve the integration of research, treatment, and evaluation. Prevention, education, and treatment programs should be regularly evaluated, and results should be widely disseminated and used to improve service quality.
6. NIAAA should fund demonstration projects for periods long enough not only to develop and test the techniques and services, but also to permit meaningful impact evaluation.
7 NIAAA should initiate direct efforts to improve the quantity and quality of the records on alcohol-related problems which are kept by other agencies and service providers. Specifically, NIAAA should work closely with other parts of the Department of Health, Education, and Welfare; the Department of Labor; other Federal agencies; State and local hospitals, clinics, and centers providing direct services; and record-keep-

ing agencies, such as centers for vital statistics. They should receive training and encouragement to include alcohol-related data in their records, collect such data consistently, summarize them regularly, and make the information available to NIAAA and to alcohol researchers.

Methodological Recommendations

1. The use of longitudinal studies should be encouraged, to study both general populations and known problem drinkers and investigate the development and consequences of alcohol problems over time.
2. Ethnomethodological (anthropological, case study) *research* should be emphasized as an alternative to survey research, as a means of better defining and describing the variables related to drinking problems among women. Intensive, qualitative research involving the use of personal interviews is needed to provide indepth information, including contextual information about drinking and alternative pathways to problem drinking.
3. Where large-scale surveys are used, populations studied should be disaggregated into subgroups, including different age and racial/ethnic populations and other special groups such as employed women. Oversampling should be used to assure adequate representation of special populations.
4. Comparison groups used in studies of alcohol problems among women should include groups other than, and in addition to, men. Suggested groups include primary and affective disorder female alcoholics, women with other mental health problems, women who do not have alcohol problems, and women in the general populatiion. When alcoholics are grouped, time since last drink should be specified.
5. Control groups should be improved through determination of variables other than demographic characteristics which may be significant in female drinking studies. "Normal population" controls should be randomly selected.
6. Instrumentation to be used for both men and women should be validated on both groups first. Negative consequences of drinking should be specified in terms appropriate for women as well as men.
7. An improved operational definition of female problem drinking should be developed. Categorization of women's drinking levels, based on quantity and frequency of consumption,

must involve a correction in the male categorization to reflect the fact that women have, on the average, a lower body weight.

8. All research should be sensitive to special subgroups such as racial and ethnic minorities. This means appropriate instrumentation, data collection procedures, and interviewer selection.
9. Improved methods should be developed for obtaining and analyzing existing secondary source data on the consequences of drinking, such as emergency room data, mortality and morbidity data, and prevalence data on diseases, such as cirrhosis.
10. Improved methodologies should be developed for the evaluation of prevention and education programs.

Substantive Recommendations

1. The problem of combined abuse of alcohol and other drugs should be studied through a major, clearly defined research program. All studies of alcohol abuse among women should include investigation of the possible use of other drugs, particularly prescription drugs. The prevalence and consequences of the combined use of alcohol and diazepam should receive major research focus, and other studies of cross addiction should receive high funding priority.
2. Epidemiological studies are needed of the entire spectrum of drinking behavior, including nonpathological and pathological drinking; studies of general populations as well as hospital inpatients are needed. Differences in drinking levels and contexts should be specified for different subpopulations, and studies should investigate different motivations for drinking and different pathways to alcoholism. Longitudinal studies using a lifecycle model would be particularly valuable. The results of such surveys should be used as a basis for the development of education, prevention, and casefinding models to meet the differing needs of specified subpopulations.
3. Research should work toward development of an equation of prediction which identifies and evaluates biological and psychosocial factors which increase female vulnerability to alcohol problems. Such risk factors must first be better defined, then investigated individually, in combination, and as they affect different populations. The possibility of genetic transmission of alcoholism should be studied. Early drinking experiences should be studied, and the maturing out phenom-

enon investigated. The effects of early history, learned behavior patterns, and significant others should be further investigated.

4. Studies are needed of sex role influences on the development and consequences of alcohol problems. These studies should use improved definitions and measures of masculinity and femininity and consider the implications of changing sex roles for both men and women.
5. The unique biological characteristics of women, especially hormonal and genetic factors, should be studied in their relation to the incidence of alcohol problems. Similarly, the possible relationship of women's drinking patterns and contexts to biological consequences (such as higher incidence of and mortality from cirrhosis of the liver) should be investigated. Morbidity and mortality data should be studied to determine expected frequencies among alcoholic women as compared with nonalcoholic women, alcoholic men, and nonalcoholic men.
6. Biological consequences, such as brain pathology and cognitive dysfunction among alcoholic women and sleep disturbance among alcoholic women as compared with alcoholic men, should be studied further.
7. There should be a greater emphasis on studies of the family systems of alcoholics, including the effects of alcoholism on the family structure and on children. The role of the family in casefinding and referral, treatment, and recovery should be better understood, and studies should focus on the husbands of alcoholic wives and on alcoholic couples, as well as the wives of alcoholic husbands.
8. The interrelationships between biological and psychosocial consequences of drinking should be further studied through interdisciplinary research.
9. The efficacy of various formal and informal casefinding systems should be investigated through demonstration efforts with strong evaluation components. Among the areas for study are the use of DWI (driving while intoxicated) arrests for casefinding, methods of encouraging referrals by family and friends, the success of media techniques for specific subgroups, and the use of a television model for reaching hidden alcoholic women.
10. Alcoholic screening and diagnostic instruments should be developed for use specifically with women; instruments

used for both groups should be validated with female populations.

11. The relationship between alcoholism and affective disorders, especially depression, should be extensively studied. An attempt should be made to validate the subdivision of female alcoholics into "primary" and "affective disorder" alcoholics, and the efficacy of different treatment methods for these subgroups should be determined. The value of lithium treatment for affective disorder alcoholic women should be systematically tested and further hormonal research carried out to determine the possible value of estrogen therapy for depressed alcoholic women.
12. The effectiveness of various types of alcohol treatment must be evaluated, with emphasis on determining the efficacy of alternative treatment modalities for different subgroups of female clients. The role of the therapist in treatment outcome should be thoroughly investigated.
13. Education efforts should focus on the physician and should also reach other health and mental health personnel and the clergy, to make them far more aware of female alcohol problems and prepare them to diagnose, treat, and refer women and men with alcohol problems. Physician education should emphasize the dangers of cross-addiction involving alcohol and prescription drugs, especially the minor tranquilizers.
14. A wide range of prevention demonstration efforts should be carried out and evaluated. The impacts of naturally occurring or unplanned events (such as the recent publicity on the fetal alcohol syndrome, and the episode in the comic strip "Apartment 3-G") should be systematically studied. The usefulness of criminal sanctions in reducing specific negative consequences of alcoholism should be investigated. The impacts of media campaigns, including combined mass media and interpersonal campaigns and counter-education efforts, should be studied.
15. Research and demonstration studies should investigate the value of leaderless groups, support groups, consciousness-raising groups, and other women's groups in alcoholism prevention and intervention. Alcoholics Anonymous concepts should be applied to the use of such groups for prevention.
16. Prevention opportunities should be determined using a life-span perspective, which considers the effects of socialization and the sociocultural system at different points in the life cycle, and the opportunities for interventions which will prevent alcohol problems.

Resolutions Passed by Participants in the Workshop on Alcoholism and Alcohol Abuse Among Women: Research Issues

1. **Resolved** that the National Institute on Alcohol Abuse and Alcoholism should accept in principle the need for special research allocation and impetus for the study of women and alcohol because of the present dearth of knowledge and the special difficulties in obtaining data.
2. **Resolved** that the National Institute on Alcohol Abuse and Alcoholism make a positive and strong effort to involve qualified women scientists and social scientists in related fields in the area of alcohol studies and that the National Institute on Alcohol Abuse and Alcoholism act so as to stimulate an increase in participation of women in alcohol research.
3. **Resolved** that the National Institute on Alcohol Abuse and Alcoholism offer assistance to persons interested in developing research projects by the establishment of a Prereview Board and that this Board act as an advisory group to strengthen proposals of potential value, submitted by less experienced researchers, prior to submission of the proposals for formal scientific review.
4. **Resolved** that the review of all National Institute on Alcohol Abuse and Alcoholism research proposals remain within the purview of the National Institute on Alcohol Abuse and Alcoholism, where persons trained and experienced in alcohol studies may facilitate the review process.

General Bibliography and References

Ablon, J. Family structure and behavior in alcoholism: A review of the literature. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism*, Vol. IV. New York: Plenum Press, 1976.

Adamson, J., and Burdick, J.A. Sleep of dry alcoholics. *Arch Gen Psychiatry*, 28:146-149, 1973.

Adelstein, A., and Graham-White. Alcoholism and mortality. *Population Trends* 7, n.d.

Adinolfi, A.A.; McCourt, W.F.; and Geogheagan, S. Group assertiveness training for alcoholics. *J Stud Alcohol*, 37:311-320, 1976.

Ahto, A. Psychopathy and abuse of alcohol among young female offenders. *Yearbook Northern Assoc Criminalists, 1946-1947* (Stockholm), 2-13, 1948.

Allen, R.P.; Wagman, A.; Fallice, L.A.; and McIntosh, M. Electroencephalographic (EEG) sleep recovery following prolonged alcohol intoxication in alcoholics. *J Nerv Ment Dis*, 153:425-433, 1971.

Allen, V.L. Situational factors in conformity. In: Berkowitz, L., ed. *Advances in Experimental Social Psychology*, Vol. II. New York: Academic Press, 1970.

Amark, C. A study in alcoholism; clinical, social-psychiatric and genetic investigations. *Acta Psychial Scand Kbh*, 70:1-283, 1951.

Argeriou, M., and Paulino, D. Women arrested for drunken driving in Boston: Social characteristics and circumstances of arrest. *J Stud Alcohol*, 37(5):648-658, 1976.

Armor, D.J.; Polich, J.M.; and Stambul, H.B. *Alcoholism and Treatment*, R-1739-NIAAA, Rand Corporation, Santa Monica, Calif., 1976.

Artz, J. Can minorities be invisible: If not, why not? *Am J Drug and Alcohol Abuse*, 3(1):181-183, 1976.

Aschkenasy-Lelu, P. Action d'un oestrogene sur la consommation spontanee d'une boisson alcoolisee chez le rat. *C R Acad Sci*, 247:1044-1047, 1958.

Aschkenasy-Lelu, P. Action inhibitrice d'une hormone oestrogene sur la consommation spontanee d'alcool par le rat. *Rev Fr Etud Clin*, 5:132-138, 1960*a*.

316-863 O - 80 - 15

Aschkenasy-Lelu, P. Relation entre l'effet inhibiteur des oestrogenes sur la consommation d'alcool du rat et leur ac on genitale. *Arch Sci Physiol* (Paris), 14:165-175, 1960*b*.

Ascione, F.J. Benzodiazepines with alcohol. *Drug Therapy*, 8 (1), January 1978.

Ashley, M.S.; Olin, J.; Ie Riche, W.; Kornaczewski, A.; Schmidt, W.; and Rankin, D. Morbidity in alcoholics: Evidence for accelerated development of physical disease in women. *Arch Intern Med*, 137:883-887, 1977.

Aura, J. "Alcoholism Agencies Staff Attitudes Toward Lesbians and Gay Men." Unpublished manuscript, 1975.

Averbukh, I. Ye. Kvoproso ob alkogolnyki psikhozakh i ikh asobennostyakh u zhenshchin. (Characteristics of alcoholic psychoses in women). *Voprosy Psikhiatrii Nevropatologii* (Leningrad), 12:387-400, 1966.

Avery, J. Special programs for women. *Alcohol Abuse Among Women: Special Problems and Unmet Needs.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1976.

Bacon, M. The dependency-conflict hypothesis and the frequency of drunkenness: Further evidence from a cross-cultural study. *Q J Stud Alcohol*, 35:863-876, 1974.

Bacon, M. Cross-cultural studies of drinking: Integrated drinking and sex differences in the use of alcoholic beverages. *Cross-Cultural Approaches to the Study of Alcohol.* Mouton, 1976.

Bacon, M., and Jones, M. *Teen-age Drinking.* New York: Thomas Y. Crowell, 1968.

Bacon, S.D. Research and the center of alcohol studies. *Ann NY Acad Sci*, 273:81-86, 1976.

Badiet, P. Women and legal drugs: A review. In: MacLennon, A., ed. *Women: Their Use of Alcohol and Other Legal Drugs.* Ontario: Addiction Research Foundation, 1976.

Bahn, A.H.; Anderson, C.L.; and Norman, V.B. Outpatient psychiatric clinic services to alcoholics. *Q J Stud Alcohol*, 24:213-226, 1963 (abstract).

Bahr, H.M., and Garrett, G.R. *Women Alone: The Disaffiliation of Urban* ism. (Alarming increase in alcoholism among women.) *Ther Ggn*, 109:130-131, 1970.

Bahr, H.M., and Garrett, G.R. *Women Alone: The Disaffiliation of Urban Females.* D.C. Heath and Company, 1976.

Bailey, M.B.; Haberman, P.; and Alksne, H. Outcomes of alcoholic marriages: Endurance, termination, or recovery. *Q J Stud Alcohol*, 23:610-623, 1962.

Bailey, M.B.; Haberman, P.; and Alksne, H. The epidemiology of alcoholism in an urban residential area. *Q J Stud Alcohol*, 26:19-40, 1965.

Bailey, M.B.; Haberman, P. and Sheinberg, J. Distinctive characteristics of the alcoholic family. In: *Report of the Health Research Council of*

the City of New York. New York: The National Council of Alcoholism. Mimeo.

Baker, S.L.; Lorei, T.; McKnight, H.A.; and Duvall, J.L. The Veterans Administration's comparison study: Alcoholism and drug abuse—combined and conventional treatment settings. *Alcoholism: Clin Exper Res*, 1:285-292, 1977.

Bardwick, J.M. *Psychology of Women.* New York: Harper and Row, 1971.

Barraclough, B.; Bunch, J.; Nelson, B.; and Sainsbury, P. A hundred cases of suicide: Clinical aspects. *Br J Psychiatry*, 125:355-373, 1974.

Bart, P. Depression in middle-aged women. In: Gornick, V., and Moran, B.K., eds. *Women in Sexist Society: Studies in Power and Powerlessness.* New York: Basic Books, 1971.

Basquin, M., and Osouf, C. Etude de 50 cas d'ethylisme feminin; constatations socio-logiques, clinques et etiologiques. (A study of 50 female alcoholics: Sociological, clinical, and etiological observations.) *Rev de l'Alcoolisme* (Paris), 11:173-180, 1965.

Bateman, N.J., and Petersen, D.M. Factors related to outcomes of treatment for hospitalized white male and female alcoholics. *J Drug Issues*, 2:66-76, 1972.

Battegay, R., and Ladewig, D. Group therapy and group work with addicted women. *Brit J Addict*, 65:89-98, 1970.

Becker, C., and Kronus, S. Sex and drinking patterns: An old relationship revisited in a new way. *Soc Prob*, 24:482-497, 1977.

Becker, W. Frauen-alkoholismus: Eine gefahrdung dieser zeit. (Female alcoholism: A danger of the times.) *Therapie der gegenwart* (Berlin), 110(3): 400-410, 1971.

Beckman, L.J. Women alcoholics: A review of social and psychological studies. *J Stud Alcohol*, 36(7):797-824, 1975.

Beckman, L.J. Alcoholism problems and women: An overview. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children.* New York: Grune and Stratton, 1976. pp. 65-96.

Beckman, L.J. Sex role conflict in alcoholic women: Myth or reality. *J Abnorm Psychol*, in press.

Beckmann, M. Situation and behandlungsmöglichkeiten der suchtkranken frau. (The position and the therapeutic possibilities of the women addict.) *Gesundheitsfutsorge* (Stuttgart), 14:95-99, 1964.

Bedell, J.W. The alcoholic housewife in the American culture. *Alcoholism Dig*, 3:4-8, 1974.

Bedoret, J.M.; Beaussart-Boulenge, L.; Beaussart, M.; and Fonton, M. Polygraphic studies of nocturnal sleep: The effects of withdrawal on the chronic alcoholic. *Electroencephalogr Clin Neurophysiol*, 32:578, 1972 (abstract).

Belfer, M., and Shader, R.I. Premenstrual factors as determinants of alcoholism in women. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children*. New York: Grune and Stratton, 1976.

Belfer, M.; Shader, R.I.; Caroll, M.; and Harmatz, J.S. Alcoholism in women. *Arch Gen Psychiatry*, 25:540-544, 1971.

Bem, S.L. The measurement of psychological androgyny. *J Pers Soc Psychol*, 31:634-643, 1975.

Bem, S.L. On the utility of alternative processes for assessing psychological androgyny *J Consult Clin Psychol*, 45:196-205, 1977.

Bendedek, T., and Rubinstein, B. The correlations between ovarian activity and psychodynamic processes. I. The ovulative phase. *Psychosom Med*, L: 245-270, 1939*a*.

Benincasa-Stagni, E., and Citterio, C. Psychogenesis and sociogenesis of alcoholism in women. *Lavoro Neuropsichiat*, 27:331-412, 1960.

Bennett, L.A.; Wolin, S.J.; and Noonan, D.L. "Family Identity and Intergenerational Recurrence of Alcoholism." Paper presented at the Sixth World Congress of Social Psychiatry, Opatija, Yugoslavia, October 1976.

Bennett, R.M. *Effects of Alcohol on Primary Process Thinking*. Ann Arbor, Michigan: University Microfilms, 73:156-59, 1973.

Berg, N.L. Effects of alcohol intoxication on self-concept: Studies of alcoholics and controls in laboratory conditions. *Q J Stud Alcohol*, 32:442-453, 1971.

Berner, P., and Kryspin-Exner, K. Die entwick lung des weiblichen alkoholismus im einzugsgebiet der Wiener Klinik seit 1954. (The course in female alcoholism among admissions to the Vienna Clinic since 1954.) *Wien Med Wochenschr*, 114:860-867, 1965.

Berner, P., and Solms, W. Alkoholismus bei frauen. (Alcoholism in women.) *Wiener Zeitschrift fur Nervennielkun de und dere'n Grenzgebiet*, 6:275-301, 1953.

Bernstein, M. "Getting Women Drinkers Into Treatment." Presented at the National Council on Alcoholism Forum, Milwaukee, Wis., April 1975.

Birchmore, D.F. The woman alcoholic: A review. *The Ont Psychol*, 7(4): 10-16, 1975.

Biron, R.; Carifo, J.; and White, R. Preliminary findings of the Peabody Alcohol Education Week evaluation. Technical Report No. 1, prepared for NIAAA. Somerville, Mass.: CASPAR Alcohol Education Program, 1977.

Bissell, L. Testimony before the Senate Subcommittee on Alcoholism and Narcotics. *Alcohol Abuse Among Women: Special Problems and Unmet Needs*. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1976. pp. 47-51, 61.

Bissell, L., and Jones. R.W. The alcoholic physician: A survey. *Am J Psychiatry*, 133(10):1142-1146, 1976.

Blackford, L. *Trends in Levels of Use Shown in Seven Annual Surveys—1968-1974 Junior and Senior High School Students.* San Mateo, Calif.: San Mateo County Department of Public Health and Welfare, 1974.

Blackford, L. "Student Trends in Drug Use—A Basis for Predicting the Future of Alcohol and Drug-related Problems Among Women," Paper presented at *Drugs, Alcohol, and Women: A National Forum,* Miami Beach, NIDA, October 1975.

Blane, H.T. *The Personality of the Alcoholic: Guises of Dependency.* New York: Harper and Row, 1968.

Blane, H.T. Trends in the prevention of alcoholism. *Psychiatr Res Rep,* 24:1-9, 1968.

Blane, H.T. Education and mass persuasion as preventive strategies. In: Room, R., and Sheffield, S., eds. *The Prevention of Alcohol Problems: Report of a Conference.* Berkeley, Calif.: Social Research Group, 1976*a*.

Blane, H.T. Education and prevention of alcoholism. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism, Vol. V: Social Biology.* New York: Plenum Press, 1976*b*.

Blane, H.T. Issues in preventing alcohol problems. *Prev Med,* 5:176-186, 1976*c*.

Blane, H.T. Recent trends in alcohol education. *Health Educ,* 7:36-38, 1976*d*.

Blane, H.T., and Hewitt, L.E. *Alcohol and Youth: An Analysis of the Literature, 1960-75.* Springfield, Va.: National Technical Information Service, March 1977.

Blane, H.T., and Hewitt, L.E. "Mass Media, Public Education and Alcohol: A State-of-the-Art Review." Report prepared for NIAAA, University of Pittsburgh, 1977.

Blane, H.T.; Barry, H., II; and Barry, H., Jr. Sex differences in birth order of alcoholics. *Brit J Psychiatry,* 119(553):657-661, 1971.

Blane, H.T.; Hill, M.J.; and Browne, E. Alienation, self-esteem and attitudes toward drinking in high school students. *Q J Stud Alcohol,* 29:350-354, 1968.

Bleichmar, H. Evaluation of treatment results in female alcoholism: Indicators of prognosis value. *Acta Pisquiatr Psicol Am Lat,* 19:265-279, 1973.

Blume, S.B. Driving histories of alcoholics in a treatment unit. *Psychiatric Q,* 43:734-743, 1968.

Blume, S.B. "The Female Alcoholic; Is She Different?" Paper presented at the NIAAA Federal Region II Conference, New York, December 5, 1973; In: *Physicians Alcohol Newsletter,* 9:4, 1974.

Blume, S.B. The Rand report: Comments. *J Stud Alcohol,* 38:163-168, 1977.

Blumenthal, M., and Ross, H. Two experimental studies of traffic law, Vol. I. *The Effect of Legal Sanctions on DWI Offenders.* Washington, D.C.: Department of Transportation, HS-800, 825, February 1973.

The Board of Professional Affairs, American Psychological Association. Report of the task force on sex bias and sex role stereotyping in psychotherapeutic practice. *Am Psychol*, 12:1169-1175, December 1975.

Bochnik, H.J.; Burchard, J.; and Dieck, C. Alkoholmissbaruch bei frauen. Lkinische clinical erfahrungen zwischen 1936 und 1957. (Alcohol misuse by women. Clinical experience between 1936 and 1957.) *Nervenarzt*, 30: 433-442, 1959.

Bokun, P. Alcoholic psychoses in split. *J Stud Alcohol*, 37(10):1483, 1976.

Bolotoya, Z.N.; Plotnikov, A.G.; and Baru, A.M. Use of lithium in the treatment of alcoholic patients. *Zh Neuropatol Psikhiatri*, 77:1235-1237, 1977.

Bondarevskii, Ya. I. Alkogolism i venericheskiye bolezni (Alcohol and venereal diseases.) *Zdravookhr ross Fed*, 12:17-19, 1974.

Bonnichsen, R., and Aqvist, S. Blodprov i fjol for rattonykterhet pa 289 kvinnor. (The blood test last year for drunken driving in the case of 289 women.) *Alkoholfragan* (Stockholm), 62(5):174-176, 1968.

Booz, Allen, and Hamilton, Inc. *An Assessment of the Needs of and Resources for Children of Alcoholic Parents.* Report to the National Institute on Alcohol Abuse and Alcoholism. Rockville, Md., November 1974.

Borders, W. Alcoholism—it's killing the people. *NY Times*, Feb. 17, 1974.

Borowitz, G.H. Some ego aspects of alcoholism. *Br J Med Psychiatry*, 37:257-263, 1964.

Boszormenyi, Z., and Stragli, G. Adatok a noi alkoholizmus kerdesehez. (On the problem of alcoholism in women.) *Ideggyogy Szle, Bp.*, 13:289-300, 1960.

Bowen, M. Alcoholism as viewed through family systems theory and family psychotherapy. *Ann NY Acad Sci*, 223:115-122, 1974.

Bowker, L.H. *Drug Use Among American Women, Old and Young: Sexual Oppression and Other Themes.* R and E Research Associates, 1977.

Brahen, L.S. Housewife drug abuse. *J Drug Educ*, 3(1):13-24, 1973.

Bratfos, O.K. Attempted suicide. *Acta Psychiatr Scand*, 47:38-55, 1971.

Brecher, E.M., and the editors of Consumer Reports, eds. Scope of drug use. *Licit and Illicit Drugs.* Boston: Little, Brown and Co., 1972.

Brenner, B. Alcoholism and fatal accidents. *Q J Stud Alcohol*, 28(3):517-528, 1967.

Brewer, C., and Perret, L. Brain damage due to alcohol consumption: An air-encephalographic, psychometric, and electroencephalographic study. *Br J Addict*, 66:170-182, 1971.

Briggs, J.F. How wives pay for their husband's success. *Med Insight*, 4(3): 21, 24-25, 1972.

Bromet, E., and Moos, R. Sex and marital status in relation to the characteristics of alcoholics. *J Stud Alcohol*. 37(9):1302-1312, 1976.

Broverman, I.K.; Bogel, S.R.; Broverman, D. et al. Sex-role stereotypes: A current appraisal, *J Soc Issues*, 28:59-72, 1972.

Broverman, I.K.; Broverman, D.M.; Clarkson, F.E.; Rosenbranz, P.S.; and Bogel, S.R. Sex role stereotypes and clinical judgements of mental health. *J Consult Clin Psychol*, 34:1-7, 1970.

Browne, M. *Relationship of Anxiety to Social Drinkers and Members of Alcoholics Anonymous.* Ann Arbor, Michigan: University Microfilms, 76-10584, 1975.

Browne-Mayers, A.N.; Hamilton, F.J.; Seelye, E.E.; and Sillman, L. "Psychosocial Study of Hospitalized Middle-class Alcoholic Women in the U.S." Paper presented at the 30th International Congress on Alcoholism and Drug Dependence, September 1972.

Browne-Mayers, A.N.; Seelye, E.E.; and Sillman, L. Psychosocial study of hospitalized middle-class alcoholic women. *Ann NY Acad Sci*, 273:593-604, 1976.

Brusa, G., and Pittaluga, E. Indagine sulla personalita nell'alcoolismo femminile. (Investigation of the personality in female alcoholics.) *Revista di Patologia Nervosa e Mentale* (Florence), 86:513-530, 1965.

Bruun, K., et al. *Alcohol Control Policies in Public Health Perspective.* New Brunswick, N.J.: Rutgers Center of Alcohol Studies, 1975.

Bullock, S.C., and Mudd, E.H. The inter-relatedness of alcoholism and marital conflict. Symposium, 1958. 2. The interaction of alcoholic husbands and their nonalcoholic wives during counseling. *Am J Orthopsychiat*, 29: 519-527, 1959.

Burns, E. *The Late Liz.* Old Tappan, N.J.: Fleming H. Revell Co., 1975.

Burtle, V. Modification of low self-esteem in women alcoholics. *Theory Research and Practice*, 11(1)36-40, Spring 1974.

Burton, C.K. *Female Alcoholism.* The Alcoholism Foundation of British Columbia, 1973.

Busch, H., and Fuerlein, M. Sociopsychological aspects in marriages of women alcoholics. *Schweizer Arch Fur Neurologie*, 116:329-341, 1975.

Busch, H.; Kormerdy, E.; and Fuerlein, W. Partners of female alcoholics. *Br J Addict*, 68:179-184, 1973.

Bush, P.J., and Rabin, D.L. Who's using nonprescribed medicines? *Medical Care*, 14:1014-1023, 1976.

Caddy, G.R., and Lovibond, S.H. Self-regulation and discriminated aversive conditioning in the modification of alcoholics' drinking behavior. *Behav Ther*, 7:223-230, 1976.

Cadogan, D.A. Marital group therapy in the treatment of alcoholism. *Q J Stud Alcohol*, 34:1187-1194, 1973.

Cadoret, R.J.; Cunningham, L.; Loftus, R.; and Edwards, J. Studies of adoptees from psychiatrically disturbed biological parents. II: Temperament, hyperactive, antisocial, and developmental variables. *Behav Pediatr*, 87:301-306, 1975.

Cadoret, R.J.; Cunningham, L.; Loftus, R.; and Edwards, J. Studies of adoptees from psychiatrically disturbed biological parents. III. Medical symptoms and illness in childhood and adolescence. *Am J Psychiatry*, 133: 1316-1318, 1976.

Cahalan, D. *Problem Drinkers*. San Francisco: Jossey-Bass, 1970.

Cahalan, D. "Implications of American Drinking Practices and Attitudes for Prevention and Treatment of Alcoholism." Paper presented at the Conference on Behavioral Approaches to Alcohol and Drug Dependencies, University of Washington, July 1975.

Cahalan, D. Observations on methodological considerations for cross-cultural alcohol studies. In: *Cross-Cultural Approaches to the Study of Alcohol*. Mouton, 1976.

Cahalan, D., and Cisin, I.H. American drinking practices: Summary of findings from a national probability sample. I. Extent of drinking by population subgroups. *Q J Stud Alcohol*, 29:130-151, 1968.

Cahalan, D., and Cisin, I.H. American drinking practices: Summary of findings from a national probability sample. II. Measurement of massed versus spaced drinking. *Q J Stud Alcohol*. 29:642-656, 1968.

Cahalan, D.; Cisin, I.H.; and Crossley, H.M. *American Drinking Practices: A National Study of Drinking Behavior and Attitudes*. New Brunswick, N.J.: Rutgers Center of Alcohol Studies, 1969.

Cahalan, D., and Roizen, R. "Changes in Drinking Problems in a National Sample of Men." Paper presented at the Alcohol and Drug Problems Association of North America Annual Meeting, San Francisco, December 1974.

Cahalan, D., and Room, R. *Problem Drinking Among American Men*. New Brunswick, N.J.: Rutgers Center of Alcohol Studies, 1974.

Calef, V. Alcoholism and ornithophobia in women. *Psychoanal Q*, 36:584-587, 1967.

Calicchia, J.P., and Barresi, R.M. Alcoholism and alienation. *J Clin Psychol*, 31:770-775, 1975 (JSA 380798).

Calobrisi, A. Treatment programs for alcoholic women. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children*. New York: Grune and Stratton, 1976.

Caplan, G. *Principles of Preventive Psychiatry*. New York: Basic Books, 1964.

Cappell, H., and Herman, C.P. Alcohol and tension reduction: A review. *Q J Stud Alcohol*, 33:33-64, 1972.

Carbary, L. Women who are not liberated. *Listen*, 27(4):4-5, 1974.

Carlson, W.L. Alcohol usage of the nighttime driver. *J Safety Res*, 4:12-25, 1972.

Carpenter, J.A., and Armenti, N.P. Some effects of ethanol on human sexual and aggressive behavior. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism*, Vol. II. New York: Plenum Press, 1972.

Carter, E.A. Generation after generation: The long-term treatment of an Irish family with widespread alcoholism over multiple generations. In: Papp, P., ed. *Family Therapy: Full-length Case Studies.* New York: Gardner Press, 1977 pp. 46-67.

Carver, V.; Huneault, N.; and Pinder, L. "Characteristics, Service Patterns, and Needs of Female Alcoholics in Ottawa-Carleton." Paper presented at the 11th Annual Conference of the Canadian Foundation on Alcohol and Drug Dependencies. Toronto, June 1976.

Cassidy, W.L.; Flannagan, N.B.; Spellman, M.; and Cohen, M.E. Clinical observations in manic-depressive disease. A quantitative study of one hundred manic-depressive patients and fifty medically sick controls. *JAMA*, 164:1535-1546, 1957.

Chafetz, M., ed. Research on alcoholism: Clinical problems and special populations. *Proc 1st Ann Alcoholism Conf NIAAA*, 1971.

Chafetz, M.; Blane, H.T.; and Hill, M.J. Childre.. of alcoholics: Observations in a child guidance clinic. *Q J Stud Alcohol*, 32:687-698, 1971.

Chafetz, M., and Hill, M.J. The alcoholic in society. In: Grunebaum, H., ed. *The Practice of Community Mental Health.* Boston: Little, Brown and Co., 1970.

Chamber of Commerce. *Alcoholism.* Harrisburg, Pa., June 1974.

Chandler, B.; Parsons, O.; and Vega, A. Autonomic functioning in alcoholics: A study of heart rate and skin conductance. *Q J Stud Alcohol*, 36:566-577, 1975.

Channing, A. Alcoholism among parents of juvenile delinquents. *Soc Serv Rev*, 1:357-383, 1927.

Chein, Isidor, et al. The female addict. *The Road to H.* Basic Books, 1964, pp. 299-319.

Chernoff, G.F. A mouse model for the fetal alcohol syndrome. *Teratology*, 11:14A, 1975.

Chesler, P. *Women and Madness.* New York: Doubleday, 1972.

Chiche-Auvigne. A propos de quelques femmes ethyliques traitees dans un service de medicine generale. (Concerning some alcoholic women treated in a general medical ward.) *Revue de l'Alcoolisme* (Paris), 9:227-282, 1963.

Child, I.L.; Barry, H, III; and Bacon, M.K. Sex differences: A cross-cultural study of drinking. *Q J Stud Alcohol*, Supp. No. 3:61-69, 1965.

Chotlos, J.W., and Goldstein, G. Psychophysiological responses to meaningful sounds. *J Nerv Ment Dis*, 145:314-325, 1967.

Christmas, J.J. "Delivery of Alcoholism Services: Meeting Whose Needs?" Seminar on Alcoholism Treatment in Prepaid Group Practice, Group Health, 1977.

Christoffel, K.K., and Salafsky, I. Fetal alcohol syndrome in dizygotic twins. *J Pediatr*, 86:963-967, 1975.

Cisin, I.H., and Calahan, D. "Regional Variations in Drinking Practices." Paper presented at Southern Sociological Association Annual Meeting, 1968.

Clark, W. Sex roles and alcohol beverage use. *Working Paper Number 16*, 1974.

Clark, W. "Contextual and Situational Variables in Drinking Behavior." Draft report prepared for NIAAA under Contract ADM-281-76-0027. Berkeley, Calif.: Social Research Group, 1977.

Clarke, S.K. Self-esteem in men and women alcoholics. *Q J Stud Alcohol*, 35:1380-1381, 1974.

Cloninger, C.R.; Christiansen, K.O.; Teich, T.; and Gottesman, I.I. Implications of sex differences in the prevalences of antisocial personality, alcoholism, and criminality for familial transmission. *Arch Gen Psychiatry*, in press.

Co, B.T.; Goodwin, D.W.; Gado, M.; Mikhael, M.; and Hill, S.Y. Absence of cerebral atrophy in chronic cannabis users. *JAMA*, 237:1229-1230, 1977.

Colen, B.D. The infant alcoholics. *Washington Post*. Feb. 2, 1975.

Colman, C.J. "Problem Drinking Women: Aspects of Their Marital Interaction and Sex Role Style." Unpublished dissertation, Harvard University, 1975.

Committee on Women and Alcoholism in New York State. *Report on Survey of Eighty-Eight New York State Out-Patient, Detoxification, Half-way House, and Rehabilitation Facilities*. (Mimeo.) Mar. 16, 1977.

Connecticut Commission on Alcoholism. Alcoholism in women. *Conn Rev*. 5(3):9-12, 1953.

Constantinople, A. Masculinity-femininity: An exception to a famous dictum. *Psychol Bull*, 80:389-407, 1974.

Cook. S., and Gregory, D. Description of services provided for women at alcoholism treatment facilities in the State of Oklahoma for fiscal year 1974. *Alcohol Tech Rep*, 4(1):10-11, 1975.

Coopersmith, S. The effects of alcohol on reactions to affective stimuli. *Q J Stud Alcohol*, 25:459-475, 1964.

Coopersmith, S., and Woodrow, K. Basal conductance level of normals and alcoholics. *Q J Stud Alcohol*, 28: 27-32, 1967.

Cooperstock, R. Sex differences in the use of mood-modifying drugs: An explanatory model. *J Health Soc Behav*, 12:238-244, 1971.

Cooperstock, R. Women and psychotropic drugs. In: MacLennan, A., ed. *Women: Their Use of Alcohol and Other Legal Drugs*. Toronto: Addiction Research Foundation, 1976.

Cooperstock, R. Psychotropic drug use among women. *CMAJ*, 115:760-763, 1977.

Cooperstock, R. "A Review of Women's Psychotropic Drug Use." Presented at Canadian Psychiatric Association Meeting, September 1977.

Corrigan, E.M. Linking the problem drinker with treatment. *Social Work*, 17:54-60, 1972.

Corrigan, E.M. "Women and problem drinking: Notes on beliefs and facts." *Addic Dis*, 1(2):215-222, 1974.

Craddick, R.A.; Leipold, V.; and Leipold, W.O. Effect of role empathy on human figures drawn by women alcoholics. *J Stud Alcohol*, 37(1):90-97, 1976.

Craig, S. Help for women alcoholics. *Opportunity*, 21:18-23, 1972.

Cramer, M.J., and Blacker, E. "Early" and "late" problem drinkers among female prisoners. *J Health Hum Behav*, 4:282-290, 1963.

Cramer, M.J., and Blacker, E. Social class and drinking experience of female drunkenness offenders. *J Health Hum Behav*, 7:276-283, 1966.

Crispino, L., and Meloni, S. Contributo allo studio sull'alcoolisma e sulle psicosi alcooliche nei deqenti presso l'Osnedale Psichiatrico Provinciale di Dergamo nel trentennio 1940-1969. (Contribution to the study of alcoholism and the alcoholic psychoses among inpatients at the Provincial Psychiatric Hospital of Dergamo during the three decades of 1940-1969), *Difesa Soc*, 50:17-44, 1971.

Cunningham, L.; Cadoret, R.J.; Loftus, R.; and Edwards, J.E. Studies of adoptees from psychiatrically disturbed biological parents: Psychiatric conditions in childhood and adolescence. *Br J Psychiatry*, 126:534-549, 1975.

Curlee, J. Alcoholic women: Some considerations for further research. *Bull Menninger Clin*, 31:154-163, 1967.

Curlee, J. Women alcoholics. *Fed Prob*, 32:16-20, 1968.

Curlee, J. Alcoholism and the "empty nest." *Bull Menninger Clin*, 33:165-171, 1969.

Curlee, J. A comparison of male and female patients at an alcoholism treatment center. *J Psychol*, 74:239-247, 1970.

Curlee, J. Sex differences in patient attitudes toward alcoholism treatment. *Q J Stud Alcohol*, 32:643-650, 1971.

Curran, F.J. Personality studies in alcoholic women. *J Nerv Ment Dis*, 86: 645-667, 1937.

Curran, F.J. Difficulties in dealing with the alcoholic woman. *The Blue Book*. Scottsdale, Ariz.: Franciscan Renewal Center, Vol. 24, 1972.

Currier, J.; Blume, S.B.; and Petrelli, J.R. "Factors Related to Therapeutic Success in a Female Alcoholism Rehabilitation Unit," unpublished data, 1968.

Cuskey, W.R.; Premkumar, T. and Sigel, L. Survey of opiate addiction among females in the United States between 1850 and 1970. *Public Health Reviews*, 1:8-39, 1972.

Dahlgren, K.G. *On Suicide and Attempted Suicide: A Psychiatric and Statistical Investigation.* Lund, Sweden: Hakan Ohlssons, 1945.

Dahlgren, L. Alkoholism hos kvinnor. (Alcoholism in women.) *Lakartidningen*, (Stockholm), 63(31):3485-3492, 1971.

Dahlgren, L. Special problems in female alcoholism. *Br J Addict*, 70(1):18-24, 1975.

Dalton, K. *The Premenstrual Syndrome.* Springfield, Ill.: Thomas, 1964.

Dammann, G. The female polydrug abuser: Fact or fiction. *West Coast Polydrug Project.* San Francisco, Calif., November 1975.

Davies, D.L.; Shepherd, J.; and Myers, E. The two-year prognosis of 50 alcohol addicts after treatment in hospital. *Q J Stud Alcohol*, 17:485-502, 1956.

Davies-Osterkamp, S. Alcoholism in women. *J S Alcohol*, 37(10):1448, 1976.

Davis, D.; Berenson, D.; Steinglass, P.; and Davis, S. The adaptive consequences of drinking. *Psychiatry*, 37:209-215, 1974.

Davis, H.G. *Variables Associated with Recovery in Male and Female Alcoholics Following Hospitalization.* Ann Arbor, Mich.: University Microfilms, 1966.

Davis, R.E. The primary prevention of alcohol problems. *Ohio's Health*, 28(3):18-20, 1976.

De Lint, J. Alcoholism, birth rank, and parental deprivation. *Am J Psychiatry*, 120:1062-1065, 1964.

De Lint, J. Alcoholism, birth order, and socializing agents. *J Abnorm Soc Psychol*, 69:457-458, 1964.

De Lint, J. The position on early parental loss in the etiology of alcoholism. *Alcoholism* (Zagreb), 2(1):56-64, 1966.

De Lint, J. The epidemiology of alcoholism: The elusive nature of the problem, estimating the prevalence of excessive alcohol use and alcohol-related mortality, current trends and the issue of prevention. *Alcoholism: A Medical Profile. Proceedings of the First International Medical Conference.* London: B. Edsall and Company, 1974.

De Lint, J., and Schmidt, W. Consumption averages and alcoholism prevalence: A brief review of epidemiological investigations. *Br J Addict*, 66:97-107, 1971.

De Lint, J., and Schmidt, W. *Age and Sex Specific Estimates of Alcohol Use and Alcoholism in Canada, 1970*, Substudy No. 528. Toronto: Addiction Research Foundation, 1973.

De Lint, J., and Schmidt, W. Alcoholism and mortality. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism*, Vol. IV. New York: Plenum Press, 1976.

Demone, H.W. Experiments in referral to alcoholism clinics. *Q J Stud Alcohol*, 24:495-502, 1963.

Deshaies, G. L'alcoolisme de la femme. (Alcoholism in women.) *Rev de l'Alcoolisme* (Paris), 9:235-247, 1963.

Deshaies, G. Aspects psychiques de l'alcoolisme chez la femme. (Psychological aspects of alcoholism in women.) *Vie Medicale* (Paris), 46:1739-1747, 1965.

De Torok, D. Chromosomal aberrations in alcoholics—cause or consequence? International Symposium on Biological Aspects of Alcohol Consumption (Helsinki), Sept. 27-29, 1971. *The Finnish Foundation for Alcohol Studies*, 20:135-143, 1972.

Di Blasi, G., and Gaglio, L. Differential drug use within the New York State Labor Force. New York Narcotic Addiction Control Commission. *Part of Commission Research Study: An Assessment of Drug Use Within the General Population, May 1971.*

Di Blasi, G., and Gaglio, L. L'incidenza delle psicotossicosi alcooliche nella Provincia di Torino; rilievi statistiei e considerazioni medico-legali. (Incidence of alcoholic psychoses in Province of Torino: Statistical review and mediocolegal considerations.) *Difesa Soc*, 481:229-242, 1969.

Dinaburg, D.; Glick, I.D.; and Feigenbaum, E. Marital therapy of women alcoholics. *J Stud Alcohol*, 38:1247-1258, 1977.

Dobnigg, H., and Economo, C.V. Die hereditare belastung der dipsomanen. *Allg Z Psychiat*, 76:383-420, 1920.

Docter, R.F.; Naitoh, P.; and Smith, J.C. Electroencephalographic changes and vigilance behavior during experimentally induced intoxication with alcoholic subjects. *Psychosom Med*, 28:605-615, 1966.

Docter, R.F., and Perkins, R.B. The effects of ethyl alcohol on autonomic and muscular responses in humans. *Q J Stud Alcohol*, 22:374-386, 1961.

Dollard, J., and Miller, N.E. *Personality and Psychotherapy: An Analysis in Terms of Learning, Thinking, and Culture.* New York: McGraw Hill, 1950.

Donovan, J.E., and Jessor, R. Adolescent problem drinking: Psychosocial correlates in a national sample study. *J Stud Alcohol*, in press.

Dowd, J.S.; Camp, J.M.; and Zaks, L.A. "Middle-aged Housewives' Drug Use Patterns: A Pilot Study." Alcohol and Drug Problems Association Conference, 1974.

Drewery, J., and Rae, J.B. A group comparison of alcoholic and non-psychiatric marriages using the interpersonal perception technique. *Br J Psychiatry*, 115:287-300, 1969.

Driscoll, G.Z., and Barr, H.L. "Comparative Study of Drug Dependent and Alcoholic Women." *Proceedings of the 23rd Annual Meeting of ADPA of North America.* Atlanta, 1972.

Dubowski, K.M. Human pharmacokinets of ethanol. I. Peak blood alcohol concentrations and elimination in male and female subjects. *Alcohol Tech Rep*, 5:55-63, 1976.

Dudko, N., and Kachaev, A.K. Effektivnost'lecheniia khronicheskogo alkogolizma u zhenshchin po katamnesticheskim dannym. (Effectiveness of

the treatment of chronic alcoholism in women according to follow-up data.) In: S. Semenov, *Voprosy Klinickii Terapii Psikhicheskikh Zabolevanii.* Moscow: Ministerstvo Zdravookhraneniia SSSR, 1971. pp. 203-206.

Dunlap, N.G. *Alcoholism in Women: Some Antecedents and Correlates of Remission in Middle-Class Members of Alcoholics Anonymous.* Ann Arbor, Mich.: University Microfilms, 1961.

DuPont, R.L. Drugs, alcoholism, and women: Discrimination in women's drug problems. *Vital Speeches of the Day*, 42:140-143, Dec. 15, 1975.

Durfee, C.H. Some practical observations on the treatment of problem drinkers. *Q J Stud Alcohol*, 7:228-239, 1946.

Edwards, G.; Hensman, C.; and Peto, J. Drinking in a London suburb. III. Comparisons of drinking troubles among men and women. *Q J Stud Alcohol*, Supp. No. 6:120-128, 1972.

Edwards, H.; Hensman, C.; and Peto, J. A comparison of male and female motivation for drinking. *Int J Addict*, 8:577-587, 1973.

Edwards, P.; Harvey, C.; and Whitehead, P. Wives of alcoholics: A critical review and analysis. *Q J Stud Alcohol*, 34(1):112-132, March 1973.

Effron, V.; Keller, M.; and Gurioli, C. *Statistics on Consumption of Alcohol and on Alcoholism.* New Brunswick, N.J.: Rutgers Center of Alcohol Studies, 1974.

Ekman, G. et al. Subjective and objective effects of alcohol as functions of dosage and time. *Psychopharmacologia*, 6:399-409, 1964.

Elder, T.C. Alcoholism and its onset in a population of admitted alcoholics: An AA study. *Br J Addict*, 68:291-294, 1973.

El-Guebaly, N., and Offord, D.R. The offspring of alcoholics: A critical review. *Am J Psychiatry*, 134:357-365, 1977.

Ellinwood, E.H., Jr.; Smith, W.G.; and Vaillant, G.E. Narcotic addiction in males and females: A comparison. *Int J Addict*, 1:33-45, 1966.

Ellinwood, E.H., Jr.; Smith, W.G.; and Vaillant, G.E. *Female Alcoholics.* London, England: Helping Hand Organization, 1976.

Emrick, C. Aurora Community Mental Health Center, Aurora, Colorado. Personal communication.

Emrick, C. A review of psychologically oriented treatment of alcoholism I. *Q J Stud Alcohol*, 35:523-549, 1974.

Emrick, C. A review of psychologically oriented treatment of alcoholism II. *J Stud Alcohol*, 36:88-108, 1975.

Emrick, C. Book review of: Ruggles, W.L.; Armor, D.J.; Polich, J.M.; Mothershead, A.; and Stephen, M. A followup study of clients at selected alcoholism treatment centers. NIAAA Final Report. *J Stud Alcohol*, 37: 1902-1907, 1976.

Epstein, P.S.; Pisani, V.D.; and Fawcett, J.A. Alcoholism and cerebral atrophy. *Alcoholism: Clin Exp Res*, 1:61-65, 1977.

Eriksson, K. Effects of ovarectomy and contraceptive hormones on voluntary alcohol consumption in the albino rat. *J Stud Alcohol*, 4:1-5, 1969.

Esser, P.H. Conjoint family therapy with alcoholics—a new approach. *Br J Addict*, 64:275-286, 1970.

Ewing, J.A., and Fox, R.E. Family therapy of alcoholism. In: Masserman, J.H., ed. *Current Psychiatric Therapies*, 8:86-91. New York: Grune and Stratton, 1968.

Feighner, J.P.; Robins, E.; Guze, S.B.; Woodruff, R.A.; Winokur, G.; and Munoz, R. Diagnostic criteria for use in psychiatric research. *Arch Gen Psychiat*, 26:57-63, 1972.

Fernandez, F.A. State of alcoholism in Spain covering its epidemiological and aetiological aspects. *Br J Addict*, 71:235-242, 1976.

Ferrier, P.E.; Nicod, I.; and Ferrier, S. Fetal alcohol syndrome. *Lancet*, 2:1496, 1973.

Feurlein, W., and Busch, H. Partnership of the chronic female alcoholic. *Proc 31st Int Cong Alcoholism and Drug Dependence*, 1975.

Fidell, L. "Put Her Down on Drugs: Prescribed Drug Usage in Women." Paper presented at the Western Psychological Association Meeting, Anaheim, Calif., 1973.

Fifield, L. *On My Way to Nowhere: Alienated, Isolated, Drunk.* Los Angeles: Gay Community Services Center Research Project, 1975.

Filene, P.G. *Him/Her/Self. Sex Roles in Modern America.* New York: Harcourt-Brace-Jovanovich, 1975.

Fillmore, J. Drinking and problem drinking in early adulthood and middle age: An exploratory 20-year followup study. *Q J Stud Alcohol*, 35:819-840, 1974.

Fillmore, K.M. Relationships between specific drinking problems in early adulthood and middle age. *J Stud Alcohol*, 36:882-907, 1975.

Fillmore, K.M. Drinking and problem drinking in early adulthood and middle age. *Q J Stud Alcohol*, 35:819-840, 1974.

Fillmore, K.M., and Marden, P.W. Longitudinal research at the Rutgers Center of Alcohol Studies. *Alcoholism: Clin Exper Res*, 1:251-258, 1977.

Filstead, W.J.; Goby, M.J.; and Bradley, N.J. Critical elements in the diagnosis of alcoholism: A national survey of physicians. *JAMA*, 236:2767-2769, 1976.

Fine, W.W.; Yudin, L.W. Holmes, J.; and Heinemann, S. Behavioral disorders in children with parental alcoholism. *Ann NY Acad Sci*, 273:507-517, 1976.

Fisher, R.A. Frequency distribution of the values of the correlation coefficient in samples from an indefinitely large population. *Biometrika*, 10:507-521, 1915.

Fitzgerald, B.J.; Pasework, R.A.; and Clark, R. Four-year follow-up of alcoholics treated at a rural State hospital. *Q J Stud Alcohol*, 32(3A):636-642, 1971.

Fitzgerald, B.J.; Pasework, R.A.; and Tanner, C.E. Use of the Edwards Personal Preference Schedule with hospitalized alcoholics. *J Clin Psychol*, 23: 194-195, 1967.

Fitz-Gerald, F.L. Voluntary alcohol consumption in apes. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism*, Vol. II. New York: Plenum Press, 1972.

Fleetwood, M.F. Biochemical experimental investigations of emotions and chronic alcoholism. In: Diethelm, O., ed. *Etiology of Chronic Alcoholism*. Springfield, Ill.: Thomas, 1955.

Fleming, M. Hostility in recovering alcoholic women compared to non-alcoholic women and the effect of psychodrama on the former in reducing hostility. Ann Arbor, Michigan: University Microfilms, 74:20516, 1974.

Follin, S., and Pivet, S. Quelques aspects particuliers de l'alcoolisme feminin. (Some special aspects of alcoholism in women.) *Rev Neurol*, 94:646-649, 1956.

Fort, T. A preliminary study of social factors in the alcoholism of women. Dissertation, Texas Christian University, 1949 (abstract).

Fort, T., and Porterfield, A.L. Some backgrounds and types of alcoholism among women. *J Health Hum Behav*, 2(1):283-292, Spring 1961.

Fox, J.H.; Ramsey, R.G.; Huckman, M.S.; and Proske, A.E. Cerebral ventricular enlargement. Chronic alcoholics examined by computerized tomography. *JAMA*, 236:365-368, 1976.

Fox, R. The alcoholic spouse. In: Eisenstein, U., ed. *Neurotic Interaction in Marriage*. New York: Basic Books, 1956.

Fox, R., ed. *Alcoholism: Behavioral Research, Therapeutic Approaches*. New York: Springer Publishing Co., 1967.

Fox, R. Children in the alcoholic family. In: Bier, W.C., ed. *Problems in Addiction: Alcoholism and Narcotics*. New York: Fordham University Press, 1972.

Fox, V., and Smith, M.A. Evaluation of a chemopsychotherapeutic program for the rehabilitation of alcoholics: Observations over a two-year period. *Q J Stud Alcohol*, 20:707-780, 1959.

Fraser, J. Female alcoholic. *Addictions*, 20(3):64-80, 1973.

Fraser, J. *The Female Alcoholic*. Toronto: Addiction Research Foundation, 1974.

Fraser, W. The alcoholic woman, attitudes and perspectives. In: MacLennan, A., ed. *Women: Their Use of Alcohol and Other Legal Drugs*. Toronto: Addiction Research Foundation, 1976.

Freed, E. Alcoholism and manic-depressive disorders: Some perspectives. *Q J Stud Alcohol*, 31:62-89, 1970.

Freed, E. Drug abuse by alcoholics: A review. *Int J Addict*, 8(3)45-473, 1973.

Frezza, V., and Zantoni, G. Incidenza dei deliri di gelosia in soggetti di sesso femminile affetti da alcoolismo cronico; contributo clinco-statistico. (In-

cidence of jealousy delirium in women with chronic alcoholism; clinical-statistical contribution.) *Alcoholism* (Zagreb), 8:101-106, 1972.

Gaines, J.J. Study on the black woman alcoholic. *Nat Alcohol Forum*, 1975.

Gaines, J.J. Alcohol and the black woman. *Alcohol Abuse and Black America.* Douglass Publishers, 1976.

Gaines, J.J. Alcohol use and abuse among black women: Some historical and cultural issues. *Alcohol Abuse Among Women: Special Problems and Unmet Needs.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1976.

Galambos, J.T. Alcoholic hepatitis: Its therapy and prognosis. In: Popper, H., and Schaffner, F., eds. *Progress in Liver Diseases*, Vol. IV. New York: Grune and Stratton, 1972, p. 567.

Galanter, M. Why some women turn to drink. *Parents Magazine*, 51:121-123, 1976.

Galton, F. *Natural Inheritance.* London: Macmillan, 1889.

Garrett, G.R. *Drinking Behavior of Homeless Women.* Dissertation, Washington State University (Ann Arbor, Mich.: University Microfilms), 1971.

Garrett, G.R., and Bahr, H.M. Women on Skid Row. *Q J Stud Alcohol*, 34: 1228-1243, 1973.

Garrett, G.R., and Bahr, H.M. Comparison of self-rating and quantity frequency measures of drinking. *Q J Stud Alcohol*, 35:1294-1306, 1974.

Garrett, G.R., and Bahr, H.M. Family backgrounds of Skid Row women. *J Women Culture Soc*, 2(2):369-381, 1976.

Garson, S. Alcoholism and women. *Alcohol Health Res World*, Summer 1974, p. 2.

Gavin-Jobson Associates. *The Liquor Handbook.* New York: Gavin-Jobson Associates, 1975.

Gayford, J. Alcoholic illness: Who cares. *R Soc Health J*, 96(4):186-188, 1976.

Gelli, B.R. Considerazioni sulla psicogensi e sociogenesi dell'alcoolismo femminile nel Salento: In base a rilievi clinico-statistici su alcooliste ricoverate nel ventennio 1945-1964. (Considerations on the psychogenesis and sociogenesis of female alcoholism in Salento: Based on clinical-statistical findings in alcoholics hospitalized in the 20-year period, 1945-1964.) *Ospedali Psichiatrico* (Naples), 33:539-582, 1965.

Gerard, D.L., and Saenger, G. *Out-patient Treatment of Alcoholism.* Addiction Research Foundation: Brookside Mono. No. 4. Toronto: University of Toronto Press, 1966.

Gibbens, T.C. Female offenders. *Br J Psychiatry*, 9:326-333, 1975.

Gibbs, J.P. Suicide. In: Merton, R.K., and Nisbet, R.A., eds. *Contemp Soc Prob*, 2d ed. New York: Harcourt, Brace and World, 1966. pp. 281-321.

Gillies, H. Homicide in the west of Scotland. *Br J Psychiatry*, 128:105-127, 1976.

Gilmer, D. "Self-acceptance, Attitudes toward Women and Social Desirability: A Comparison of Male and Female Alcoholics." Dissertation, University of Pitt, 1974.

Glatt, M.M. Drinking habits of English (middle-class) alcoholics. *Acta Psychiatr Scand*, 37:88-113, 1961.

Glatt, M.M. Treatment results in an English mental hospital alcoholism unit. *Acta Psychiatr Scand*, 37:143-168, 1961.

Glatt, M.M. Experiences with elderly alcoholics in England. *Alcoholism: Clin Exper Res*, 2:23-26, 1978.

Goldberg, L., and Stortebecker, T.P. The antinarcotic effect of estrone on alcohol intoxication. *Acta Psychiatr Scand*, 5:289-296, 1943.

Gomberg, E. Women and alcoholism. In: Frands, V., and Bertle, V., eds. *Women in Therapy*, New York: Brunner/Mazel, 1974.

Gomberg, E. *Alcoholism and Women: State of the Knowledge Today*. New York: National Council on Alcoholism, April 1975.

Gomberg, E. The female alcoholic. In: Tarter, R.E., and Sugerman, A.A., eds. *Alcoholism: Interdisciplinary Approaches to an Enduring Problem*. Reading, Mass.: Addison-Wesley, 1976.

Gomberg, E. Alcoholism in women. In: Kissin, B., and Begleiter, H., eds. *Social Aspects of Alcoholism*. New York: Plenum Press, 1976.

Gomberg, E. Women with alcohol problems. In: Estes, N.J., and Heinemann, M.E., eds. *Alcoholism: Development for Consequences and Interventions*. St. Louis, Mo.: C.V. Mosby Co., 1977.

Gonner, A. Alkoholismus bei frauen der besseren staude. (Alcoholism among women of the better classes.) *Schweiz Med Wschr*, 59:1059, 1929.

Goodstadt, M.S. "Alcohol and Drug Education: Models and Outcomes." Paper presented at the 11th Annual Conference of the Canadian Foundation on Alcohol and Drug Dependencies, Toronto, June 1976.

Goodwin, D. Is alcoholism hereditary? *Arch Gen Psychiatry*, 25:545-549, 1971.

Goodwin, D. Alcohol in suicide and homicide. *Q J Stud Alcohol*, 34:144-156, 1973*a*.

Goodwin, D. Genetic and experimental antecedents of alcoholism, a prospective study. *Alcoholism: Clin Exper Res*, 1:259-265, 1977.

Goodwin, D.; Crane, J.B.; and Guze, S.B. Phenomenological aspects of the alcoholic "blackout." *Br J Psychiatry*, 115:1033-1038, 1969.

Goodwin, D., and Hill, S.Y. Chronic effects of alcohol and other psychoactive drugs on intellect, learning, and memory. In: Rankin, J., ed. *Alcohol, Drugs, and Brain Damage*. Ontario, Toronto, 1975. pp. 55-70.

Goodwin, D.; Schulsinger, F.; Hermansen, L.; Guze, S.B.; and Winokur, G. Alcohol problems in adoptees raised apart from alcoholic biological parents. *Arch Gen Psychiatry*, 28:238-243, 1973*b*.

Goodwin, D.; Schulsinger, F.; Hermansen, L.; Guze, S.; and Winokur, G. Alcoholism and the hyperactive child syndrome. *J Nerv Ment Dis*, 100:349-353, 1975.

Goodwin, D.; Schulsinger, F.; Knop, J.; Mednick, S.; and Guze, S.B. Alcoholism and depression in adopted-out daughters of alcoholics. *Arch Gen Psychiatry*, 34:751-755, 1977.

Goodwin D. et al. Drinking problems in adopted and non-adopted sons of alcoholics. *Arch Gen Psychiatry*, 31:164-169, 1974.

Gorad, S.C. Communication styles and interaction of alcoholics and their wives. *Family Proc*, 10(4):475-489, 1971.

Gordon, F.E., and Hall, D.T. Self-image and stereotypes of femininity: Their relation to women: Role conflicts and coping. *J App Psychol*, 59:241-243, 1974.

Gorwitz, K.; Bahn, A.; and Warthen, T.J. Some epidemiological data on alcoholism in Maryland: Based on admissions to psychiatric facilities. *Q J Stud Alcohol*, 31(2):423-443, 1970.

Gossop, M. Drug dependence and self-esteem. *Int J Addict*, 11(5):741-753, 1976.

Gove, W.R., and Tudor, J.F. Adult sex roles and mental illness. In: Huber, J. ed. *Changing Women in a Changing Society*. University of Chicago Press, 1973. pp. 50-73.

Green, H.G. Infants of alcoholic mothers. *Am J Obstet Gynecol*, 118(5):713-716, 1974.

Green, J., and Jaffe, J.H. Alcohol and opiate dependence: A review. *J Stud Alcohol*, 38:1274-1293, 1977.

Greenberg, R., and Pearlman, C. Delirium tremens and dreaming. *Am J Psychiatry*, 124:133-142, 1967.

Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children*. New York: Grune and Stratton, 1976.

Gregoire, Fr., and Verbanck, M. Pathologie medicale secondaire a l'ethylisme (Medical pathology secondary to alcoholism). *Revue de l'Alcoolisme*, 19:179-190, 1973.

Gresham, S.C.; Webb, W.B.; and Williams, R.L. Alcohol and caffeine: Effect on inferred visual dreaming. *Science*, 140:1226-1227, 1963.

Gross, M.M.; Goodenough, D.R.; Hastey, J.; and Lewis, E. Experimental study of sleep in chronic alcoholics before, during and after 4 days of heavy drinking, with a nondrinking comparison. *Ann NY Acad Sci*, 215: 254-265, 1973.

Gross, M.M.; Goodenough, D.R.; Tobin, M.; Halpert, E.; Lepore, D.; Perstein, A.; Sirota, M.; Dibianco, J.; Fuller, R.; and Kishner, I. Sleep disturbances and hallucinations in the acute alcoholic psychoses. *J Nerv Ment Dis*. 142:493-514, 1966.

Guendel, K. *Bergleich der Sociogenese des Weiblichen und Mannlichen Alkoholismus Anhand einer Sekundaranalyse Klinischer Daten*. (Comparison

of the sociogenesis of women and men alcoholics based on a secondary analysis of clinical data.) Dissertation, Ludwig-Maximilians Universitat, Munchen, 1972.

Gunther, M. Female alcoholism: The drinker in the pantry. *Today's Health*, 53:15-18, 1975.

Gusfield, J.R. The prevention of drinking problems. In: Filstead, W.J.; Rossi, J.J.; and Keller, M., eds. *Alcohol: New Thinking and New Directions*. Cambridge, Mass.: Ballinger, forthcoming.

Gustafson, D. Den nya kvinnan—dricker hon som en karl? (The new woman—does she drink like a man?) *Alk Narkot*, 68:22-27, 1974.

Guttentag, M.; Salasin, S.; and Legge, W.W. "Women and Mental Health: A Study in Progress." Harvard University Graduate School of Education, manuscript, 1976.

Guze, S.B., and Robins, E. Suicide and primary affective disorders. *Br J Psychiatry*, 117, 1970.

Guze, S.B.; Wolfgram, E.D.; McKinney, J.K.; and Cantwell, D.P. Psychiatric illness in the families of convicted criminals: A study of 519 first-degree relatives. *Dis Nerv Sys*, 28, 1967.

Haberman, P.W. Some characteristics of alcoholic marriages differentiated by level of deviance. *J Marriage Fam*, 27:34-36, 1965.

Haffner, J.F.W.; Morland, J.; Setekleiv, J.; Stromsaether, C.E.; Danielsen, A.; Frivik, P.T.; and Dybing, F. Mental and psycho-motor effects of diazepam and ethanol. *Acta Pharmacol Toxicol*, 32:161-178, 1973.

Haggard, H.W., and Jellinek, E.M. *Alcohol Explored*. New York: Doubleday, 1942.

Hall, B.D., and Orenstein, W.A. Noonan's phenotype in an offspring of an alcoholic mother. *Lancet*, 1:680, 1974.

Hallen, J., and Krook, H. Follow-up studies on unselected ten year material of 360 patients with liver cirrhosis in one community. *Acta Med Scand*, 173:479, 1963.

Hallen, J., and Linne, I. Cirrhosis of the liver in one community. A study of 768 cases of liver cirrhosis from a city with one hospital: Incidence, etiology and prognosis. In: Engel, A., and Larsson, T., eds. *Alcoholic Cirrhosis and Other Toxic Hepatopathies*. Stockholm: Nordiska Bokhandins, Forlag, 1970. pp. 336ff.

Hamilton, G.R. Outpatient treatment for the woman alcoholic. In: Newman, J., ed. *Counseling the Woman Alcoholic: Proceedings of a Workshop*. University of Pittsburgh, 1977.

Hanson, J.W.; Jones, K.L.; and Smith, D.W. Fetal alcohol syndrome: Experience with 41 patients. *JAMA*, 235(14):1458-1460, 1976.

Hanson, P.; Sands, P.M.; and Sheldon, R.B. Patterns of communication in alcoholic marital couples. *Psychiatric Q*, 42:538-547, 1968.

Hardison, W.G., and Lee, F.I. Prognosis of acute liver disease of the alcoholic patient. *New Engl J Med*, 275:61-66, 1966.

Harford, T.C. "Contextual Drinking Patterns Among Men and Women." Paper presented at the 8th Annual Medical-Scientific Conference of the National Council on Alcoholism Forum, San Diego, May 1977.

Harper, F.D. Etiology: Why do blacks drink? *Alcohol Abuse and Black America*, Douglass Publishers, 1976.

Hart, L. Attitudes among a group of female alcoholics toward alcoholism. *Br J Addict*, 69(4).

Hartshorn, E.A. Interactions of CNS drugs—psychotherapeutic agents—antianxiety drugs. *Drug Intel Clin Pharm*, 9(1), January 1975.

Hatcher, E.M.; Jones, M.K.; and Jones, B.M. Cognitive deficits in alcoholic women. *Alcoholism: Clin Exp Res*, 1:371-377, 1977.

Hatcher, R., and Jones, B.M. Inhibition of alcohol dehydrogenase with estrogen. *Alcohol Tech Rep*, 6(3):39-41, 1977.

Haug, J.O. Pneumoencephalographic evidence of brain damage in chronic alcoholics (a preliminary report). *Acta Psychiat Scand*, 203:135-143, 1968.

Hawkins, J.L. "Lesbianism and alcoholism." In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children*. New York: Grune and Stratton, 1976.

Hechtman, L.; Weiss, G.; Finklestein, J.; Werner, A.; and Benn, R. Hyperactives as young adults: Preliminary report. *Can Med Assoc J*, 115:625-630, 1976.

Helson, R. The changing image of the career women. *J Soc Issues*, 28:33-46, 1972.

Hemmi, T., and Yabuki, Y. On female drug and alcohol addicts. *Acta Criminol Med Leg Japan*, 30:13, 1964. (Source of abstract: *Excerpta Criminologica*, 4:Abstract No. 1754, 1964.)

Herjanic, M. "Children of Alcoholics." Paper presented at the National Council on Alcoholism Forum. Washington, D.C., May 8, 1976.

Hill, M.J., and Blane, H.T. Evaluation of psychotherapy with alcoholics: A critical review. *Q J Stud Alcohol*, 28:76-104, 1967.

Hill, S.Y.; Cloninger, C.R.; and Ayre, F.R. Independent familial transmission of alcoholism and opiate abuse. *Alcoholism: Clin Exp Res*, 1:335-342, 1977.

Hill, S.Y., and Mikhael, M. "Computerized Transaxial Tomography and Neuropsychological Evaluations in Chronic Alcoholics and Heroin Abusers," in press.

Hillbo, A. Kvinnoras alkoholvanor undersokta. (Women's alcohol practices are investigated.) *Alkoholfragan* (Stockholm), 62(3):82-85, 1968.

Himmelhock, J.M.; Mulla, D.; Neil, J.F.; Detre, T.P.; and Knupfer, D.J. Incidence and significance of mixed affected states in a bipolar population. *Arch Gen Psychiatry*, 33:1062-1066, 1976.

Hindman, M. Child abuse and neglect: The alcohol connection. *Alcohol Health Res World*, in press.

Hirsh, J. Women and alcoholism. In: Bier, W.C., ed. *Alcoholism and Narcotics*. New York: Fordham University Press, 1962.

Ho, A.K., and Tsai, C.S. Effects of lithium on alcohol preference and withdrawal. *Ann NY Acad Sci*, 273:371-377, 1976.

Hoffman, H., and Jackson, D.N. Differential personality inventory for male and female alcoholics. *Psychol Rep*, 34:21-22, 1974.

Hoffman, H., and Noem, A. Alcoholism among parents of male and female alcoholics. *Psychol Rep*, 36(1):322, 1975.

Hoffman, H., and Noem, A. Sex differences in a State hospital population of alcoholics on admission and treatment variables. *Psychol Rep*, 37(1):145-146, 1975.

Hoffman, H., and Noem, A. Social background variables: Referral sources and life events of male and female alcoholics. *Psychol Rep*, 37(3):1087-1092, 1975.

Hoffman, H., and Wefring, L.R. Sex and age differences in psychiatric symptoms of alcoholics. *Psychol Rep*, 30:887-889, 1972.

Holden, M. Treatability of children of alcoholic parents. *Smith Coll Stud Soc Work*, 16:44-61, 1945.

Hollingshead, A.B. "Two-factor Index of Social Position." New Haven, Conn. (Mimeo.) 1957.

Hollingshead, A.B., and Redlich, F.C. *Social Class and Mental Illness: A Community Study*. New York: John Wiley and Sons, 1958.

Holter, H. Sex roles and social change. In: Dreitzel, H.P., ed. *Family Marriage and the Struggle of the Sexes*. New York: Macmillan, 1972.

Holzberg, J.D. Sex differences in schizophrenia. In: H. Beigel, ed. *Advances in Sex Research*. New York: Harper and Row, 1963.

Homiller, J.D. "Sex Bias in Alcoholism Research." Paper presented at the National Drug Abuse Conference, New York, NY, 1976.

Homiller, J.D. Female alcoholism: An analysis of the literature. *Addict Dis*, 37(1), 1977.

Homiller, J.D. *Women and Alcohol: A Guide for State and Local Decision Makers*. Washington, D.C.: Alcohol and Drug Problems Association of North America, 1977.

Horn, D. "Current Needs for Dealing With Cigarette Smoking." Statement to the Commission on Smoking Policy of the American Cancer Society, Los Angeles, March 1977.

Horn, J.L. Second-order factors in questionnaire data. *Educ Psychol Meas*, 23:117-134, 1963.

Horn, J.L. On subjectivity in factor analysis. *Educ Psychol Meas*, 27:811-820, 1967.

Horn, J.L., and Wanberg, K.W. Symptom patterns related to excessive use of alcohol. *Q J Stud Alcohol*, 30:35-58, 1969.

Horn, J.L., and Wanberg, K.W. "Females Are Different: Some Difficulties in Diagnosing Problems of Alcohol Use in Women." Paper presented at the First Annual Conference of the National Institute on Alcohol Abuse and Alcoholism, Washington, D.C., June 1971.

Horner, M.S. Toward an understanding of achievement related conflicts in women. *J Soc Issues*, 28(2):157-175, 1972.

Howells, J.G., ed. *Modern Perspectives in Psycho-Obstetrics*. New York: Brunner and Mazel, 1972.

Hubbard, H. *Prevention Model Replication Program: Program Guidelines and Model Program Descriptions*. NIAAA Division of Prevention, 1978.

Hyman, M.M. Alcoholics fifteen years later. In: Seixas, F.A., and Eggleston, S., eds. *Work in Progress on Alcoholism. Ann NY Acad Sci*, 273:613-623 1976.

Irwin, K.C. *Women, Alcohol, and Drugs: A Feminist Course Focusing on Causes and Prevention of Abuse*. San Diego, Calif.: Department of Substance Abuse, 1976.

Irwin, S. *Drugs of Abuse: An Introduction to Their Actions and Potential Hazards*. The Student Association for the Study of Hallucinogens, 1973.

Ivey, M.E., and Bardwick, J.M. Patterns of affective fluctuation in the menstrual cycle. *Psychosom Med*, 30:336-345, 1968.

Jackson, J.K. The adjustment of the family to the crisis of alcoholism. *Q J Stud Alcohol*, 15:562-586, 1954.

Jackson, J.K. Alcoholism and the family. In: Pittman, D.J., and Snyder, C.R., eds. *Society, Culture, and Drinking Patterns*. New York: John Wiley, 1962.

Jacob, A.G., and Lavoie, C.A. "A Study of Some Characteristics of a Group of Women Alcoholics." Paper presented at the Conference of the North American Association of Alcoholism Programs, Hartford, June 1971.

James, J.E. Symptoms of alcoholism in women: A preliminary survey of AA members. *J Stud Alcohol*, 36:1564-1569, 1975.

James, N.M., and Chapman, C.J. A genetic study of bipolar affective disorders. *Br J Psychiatry*, 126:449-456, 1975.

Jansen, D.G. Use of the personal orientation inventory with State hospital alcoholics. *J Clin Psychol*, 30:310-311, 1974.

Jansen, D.G., and Hoffman, H. Demographic and MMPI characteristics of male and female State hospital alcoholic patients. *Psychol Rep*, 33:561-562, 1973.

Jarvis, G.K.; Ferrerke, R.G.; Johnson, F.G.; and Whitehead, P.C. Sex and age patterns in self-injury. *J Health Social Behav*, 17:145-159, 1976.

Jellinek, E.M. Phases of alcohol addiction. *Q J Stud Alcohol*, 13:673-684, 1952.

Jellinek, E.M. *The Disease Concept of Alcoholism*. New Haven: Hillhouse, 1960.

Jessor, R.; Carman, R.S.; and Grossman, P.H. Expectations of need satisfaction and drinking patterns of college students. *Q J Stud Alcohol*, 29:101-116, 1968.

Jessor, R.; Collins, M.I.; and Jessor, S.L. On becoming a drinker: Social psychological aspects of an adolescent transition. In: Seixas, F., ed. *Nature and Nurture in Alcoholism*. New York: Annals of the New York Academy of Sciences, 1972.

Jessor, R.; Graves, T.D.; Hanson, R.C.; and Jessor, S.L. *Society, Personality, and Deviant Behavior: A Study of a Tri-Ethnic Community*. New York: Holt, Rinehart, and Winston, 1968.

Jessor, R., and Jessor, S.L. Problem drinking in youth: Personality, social, and behavioral antecedents and correlates. In: Chafetz, M.E., ed. *Psychological and Social Factors in Drinking. Proceedings, 2nd Annual Alcoholism Conference*, NIAAA. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1973.

Jessor, R., and Jessor, S.L. Adolescent development and the onset of drinking: A longitudinal study. *J Stud Alcohol*, 35:27-51, 1975.

Jessor, R., and Jessor, S.L. *Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth*. New York: Academic Press, 1977.

Jessor, R., and Jessor, S.L. Toward a social-psychological perspective on the prevention of alcohol abuse. *Proceedings, Conference on Normative Approaches to Alcoholism and Alcohol Problems*. San Diego, 1977, in press.

Jessor, S.L., and Jessor, R. Maternal ideology and adolescent problem behavior. *Dev Psychol*, 1974.

Jewett, J.F. Alcoholism and ruptured uterus. *N Engl J Med*, 294:335-336, 1976.

Johnson, C. Does maternal alcoholism affect offspring? *Clin Pediatr*, 13:633-634, 1974.

Johnson, L.C.; Burdick, J.A.; and Smith, J. Sleep during alcohol intake and withdrawal in the chronic alcoholic. *Arch Gen Psychiatry*, 22:406-418, 1970.

Johnson, M.W. Physicians' views of alcoholism with special reference to alcoholism in women. *Nebr State Med J*, 50:378-384, 1965.

Johnson, M.W.; De Vries, J.C.; and Houghton, M.I. The female alcoholic. *Nurse Res*, 15(4):343-347, fall 1976.

Johnson, S., and Garzon, S. "Women and Alcoholism: Past Imperfect and Future Indefinite." Midwinter Research Conference of the Association for Women in Psychology, 1977.

Johnson-Jones, S. *Alcoholism and Women.* Report for NCALI, 1975.

Jones, B.M. Alcohol and women: Intoxication levels and memory impairment as related to the menstrual cycle. *Alcohol Tech Rep*, 4(1):4-10, 1975.

Jones, B.M.; Hatcher, E.; Jones, M.K.; and Farris, J.J. The relationship of extraversion and neuroticism to the effects of alcohol on cognitive performance in male and female social drinkers. *Currents in Alcoholism.* New York: Grune and Stratton, 1978.

Jones, B.M., and Jones, M.K. Effects of a moderate dose of alcohol on female social drinkers at different times in the menstrual cycle. *Chronobiologia*, 2(1):34, 1975.

Jones, B.M., and Jones, M.K. Alcohol effects in women during the menstrual cycle. *Ann NY Acad Sci*, 273:576-587, 1976.

Jones, B.M., and Jones, M.K. States of consciousness and alcohol: Relationship to the blood alcohol curve, time of day and the menstrual cycle. *Alcohol Health Res World*, 1(1):10-15, 1976.

Jones, B.M., and Jones, M.K. Women and alcohol: Intoxication, metabolism, and the menstrual cycle. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children.* New York: Grune and Stratton, 1976.

Jones, B.M., and Jones, M.K. Male and female intoxication levels for three alcohol doses, or do women really get higher than men? *Alcohol Tech Rep*, 5(1):11-14, 1976.

Jones, B.M., and Jones, M.K. Alcohol and memory impairment in male and female social drinkers. In: Birnbauer, I., and Parker, E., eds. *Alcohol Hum Mem.* Hillsdale, N.J.: Erlbau, 1977.

Jones, B.M., and Jones, M.K. Interaction of alcohol, oral contraceptives, and the menstrual cycle with stimulus-response compatibility. In: Seixas, F.A., ed. *Currents in Alcoholism*, Vol. II. New York: Grune and Stratton, 1977.

Jones, B.M.; Jones, M.K.; and Paredes, A. "Oral Contraceptives and Ethanol Metabolism." 15th Annual Reunion of Mexican Society of Nutrition and Endocrinology, 1975.

Jones, B.M.; Jones, M.K.; and Paredes, A. Oral contraceptives and ethanol metabolism. *Alcohol Tech Rep*, 5(2):28-32, 1976.

Jones, B.M., and Parsons, O.A. Alcohol and consciousness: Getting high, coming down. *Psychol Today*, January 1975.

Jones, B.M.; Parsons, O.; and Rundell, O.H. Psychophysiological correlates of alcoholism. In: Tarter, R.E., and Sugerman, A., eds. *Alcoholism: Interdisciplinary Approaches to an Enduring Problem.* Reading, Mass.: Addison—Wesley, 1976. pp. 435-478.

Jones, K.L., and Smith, D.W. Recognition of the fetal alcohol syndrome in early infancy. *Lancet*, 2:999-1001, 1973.

Jones, K.L., and Smith, D.W. The fetal alcohol syndrome. *Teratology*, 12:1-10, 1975.

316-863 O - 80 - 16

Jones, K.L.; Smith, D.W.; and Hanson, J.W. The fetal alcohol syndrome: Clinical delineation. *Ann NY Acad Sci*, 273:130-137, 1976.

Jones, K.L.; Smith, D.W.; Streissguth, A.P.; and Myrianthopoulos, N.C. Outcome in offspring of chronic alcoholic women. *Lancet*, 1:1076-1078, 1974.

Jones, K.L.; Smith, D.W.; Ulleland, C.N.; and Streissguth, A.P. Patterns of malformation in the offspring of chronic alcoholic mothers. *Lancet*, 1:1267-1271, 1973.

Jones, M.C. Personality correlates and antecedents of drinking patterns in adult males. *J Consult Clin Psychol*, 32:2-12, 1968.

Jones, M.C. Personality antecedents and correlates of drinking patterns in women. *J Consult Clin Psychol*, 36:61-69, 1971.

Jones, R.W. Alcoholism among relatives of alcoholic patients. *Q J Stud Alcohol*, 33:810, 1972.

Jones, R.W., and Helrich, A.R. Treatment of alcoholism by physicians in private practice. *Q J Stud Alcohol*, 33:117-131, 1972.

Judd, L.L; Hubbard, B.; Leighton, Y.H.; Attewell, P.A.; Janowsky, D.S.; and Takahashi, K.I. Lithium carbonate and ethanol induced "highs" in normal subjects. *Arch Gen Psychiatry*, 34:463-467, 1977.

Kachaev, A.K. K sootnosheniiu vozrastnykh pokazatelei zabolevaemosti alkogolizmom ahenskogo naseleniia s obrashchaemost' iu bol' nykh v lechebnye uchrezhdeniia. (On the relationship between age factors in the onset of alcoholic morbidity in a female population and the return of patients to treatment centers.) In: Semenov, S., ed. *Vopr Klin Terap Psikhicheskikh Zabolevanii.* Moscow: Ministerstvo Zdravookhraneiia SSSR, 1971.

Kaim, S.C.; Kissin, B.; Chafetz, M.E.; and Seixas, F.A. Comments on the N.C.A. criteria for the diagnosis of alcoholism: An empirical study. *J Stud Alcohol*, 38:1830-1837, 1977.

Kaim, S.C.; Klett, C.J.; and Rothfield, B. Treatment of the acute alcohol withdrawal state: A comparison of four drugs. *Am J Psychiatry*, 125: 1640-1646, 1969.

Kammeier, Sr. M.L., and Laurdergan, J.C. *The Outcome of Treatment.* Hazelden Foundation, Inc., 1977.

Kardos, G., and Toth, A. Adatok az alkoholizmus tara slelektani es epidemiologiai kerdeseihez. A Budapesti psychiatriai osztalyokon 1953-1955 es 1963-1965 evekben apolt 621 alkoholista nobetegrol. (Sociopsychological and epidemiological factors in alcoholism. I. On 621 women alcoholics in psychiatric wards in Budapest during the years 1953-1955 and 1963-1965.) *Ideggyogy Szle Bp*, 23:17-26, 1970.

Karp, S.A.; Poster, D.C.; and Goodwin, A. Differentiation in alcoholic women. *J Pers*, 31, 1963.

Karpman, B. *The Alcoholic Woman.* Washington: Linacre Press, 1956.

Kastler-Maitron, and Burckard, E. Quelques considerations sur alcoolisme chronique chez la femme. (Some considerations on chronic alcoholism in women.) *Cah Psychiat,* 10:31-44, 1955.

Katton, L.; Horwitz, J.; and Cabellero, E. Characteristics of alcoholism in women and evaluation of its treatment in Chile. *Acta Pisquiatrica Y Psicologica de America Latina,* 19(3):194-204, 1973.

Kaufman, E. Polydrug abuse or multidrug misuse: It's here to stay. *Br J Addict,* 72(4):339-347, 1977.

Keller, M. Discussion of alcoholism in women. *Proc 1st Ann Alcohol Conf NIAAA,* 1971.

Keller, M. The oddities of alcoholics. *Q J Stud Alcohol,* 33, 1972.

Keller, M. *Women Alcoholics.* Washington, D.C.: Department of Health, Education, and Welfare; Alcohol, Drug Abuse, and Mental Health Administration, Session D, First Annual Alcoholism Conference, 1971.

Keller, M., and Efron, V. The prevalence of alcoholism. *Q J Stud Alcohol,* 16:619-644, 1955. pp. 631-633; 636-638.

Kempe, C.H., and Helfer, R.E. *Helping the Battered Child and His Family.* New York: Lippincott, 1972.

Kennedy, D.L. Behavior of alcoholics and spouses in a simulation game situation. *J Nerv Ment Dis,* 162(1):23-34, 1976.

Kent, P. *An American Woman and Alcohol,* New York: Holt, Rinehart and Winston, 1967.

Kenyon, W.H. *About the Illness Alcoholism.* London: National Council on Alcoholism, 1972.

Kern, J.C., and Schmelter, W. "Results of a Low-cost Followup Study of 189 Alcoholics." Presented at the Fourth Annual National Drug Abuse Conference, San Francisco, 1977.

Kern, J.C.; Schmelter, W.; and Paul, S.R. Drinking drivers who complete and drop out of an alcohol education program. *J Stud Alcohol,* 38:89-95, 1977.

Kessel, N., and Grossman, G. Suicide in alcoholics. *Br Med J,* 2:1671-1672, 1961.

Khantzian, E.J. "Drug-Alcohol Problems in Women: A Clinical Perspective." Senate Subcommittee on Alcoholism and Narcotics, 1976.

Kim, S.S., and Hodginson, R. Acute ethanol intoxication and its prolonged effect on a full-term neonate. *Anesthesia and Analgesia: Current Issues,* 55(4):602-603, 1976.

Kinsey, B.A. *The Female Alcoholic: A Social Psychological Study.* Springfield, Ill.: Thomas, 1966.

Kinsey, B.A. Psychological factors in alcoholic women from a state hospital sample. *Am J Psychiatry,* 124:10, 1968.

Kinter, S. *So What's So Different About Women Who Drink?* Connecticut State Alcohol Council, 1975.

Kirkpatrick, J. *Women Alcoholics: A Plan for Pennsylvania.* Quakertown, Pa.: Women for Sobriety, 1975.

Kirkpatrick, J. Women for sobriety. *Alcohol Abuse Among Women: Special Problems and Unmet Needs.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1976.

Kissin, B., and Gross, M.M. Drug therapy in alcoholism. *Am J Psychiatry*, 125:31-44, 1968.

Kissin, B.; Schenker, V.; and Schenker, A. The acute effects of ethyl alcohol and chlorpromazine on certain physiological functions in alcoholics. *Q J Stud Alcohol*, 20:480-492, 1959.

Klaiber, E.L. et al. Plasma monoamine oxidase activity in regularly menstruating women and amenorrheic women receiving cyclic treatment with estrogen and progestin. *J Clin Endocrinol Metab*, 33:630-638, 1971.

Klatsky, A.L.; Friedman, G.D.; Siegelaub, A.B.; and Gerard, M.J. Alcohol consumption among white, black, or oriental men and women: Kaiser-Permanente Multiphasic Health Examination data. *Am J Epidemiol*, 105: 311-323, 1977.

Kleinknecht, R.A., and Goldstein, S.G. Neuropsychological deficits associated with alcoholism. *Q J Stud Alcohol*, 33:999-1019, 1972.

Kline, N.S.; Wren, J.C.; Cooper, T.B.; Varga, E.; and Conal, O. Evaluation of lithium therapy in chronic and periodic alcoholism. *Am J Med Sci*, 268:15-22, 1974.

Knight, R.P. The psychodynamics of chronic alcoholism. *J Nerv Ment Dis*, 86:538-548, 1937.

Knupfer, G. Female drinking patterns. *Selected Papers Presented at the Fifteenth Annual Meeting of the North American Association of Alcoholism Programs.* Washington, D.C., 1964.

Knupfer, G.; Fink, R.; Clark, W.B.; and Goffman, A.S. *Factors Related to the Amount of Drinking in an Urban Community.* California Drinking Practices Study, Report No. 6. Berkeley: Division of Alcoholic Rehabilitation, California State Department of Public Health, 1963.

Knupfer, G., and Room, R. Drinking patterns and attitudes of Irish, Jewish, and white Protestant American men. *Q J Stud Alcohol*, 28:676-699, 1967.

Koller, K.M. Family background and life situation in alcoholics. A comparative study of parental deprivation and other features in Australia. *Arch Gen Psychiatry*, 21:603-610, 1969.

Konopka, G. *Young Girls: A Portrait of Adolescence.* Englewood, N.J.: Prentice-Hall, 1976.

Kopun, M., and Propping, P. The kinetics of ethanol absorption and elimination in twins and supplementary repetitive experiments in singleton subjects. *Eur J Clin Pharmac*, 11:337-344, 1977.

Kotarba, J.A. "The Serious Nature of Tavern Sociability." Paper presented at the Annual Meeting of the Society for the Study of Social Problems, Chicago, September 1977.

Kramer, K.; Kuller, L.; and Fisher, R. The increasing mortality attributed to cirrhosis and fatty liver in Baltimore (1957-1966). *Ann Intern Med*, 69:273-282, 1968.

Krasner, N.; Davis, M.; Portmann, B.; and Williams, R. The changing pattern of alcoholic liver disease in Great Britain—relationship to sex and immunological factors. *Br Med J*, in press.

Kratz, R.C. *Psychological Comparison of Alcoholism Counselors, Abstinent Alcoholics and Chemically Dependent Inpatients.* Ann Arbor, Mich.: University Microfilms, 75-00173, 1975.

Krimmel, H., and Falke, D.M. Short-term treatment of alcoholism. *Soc Work*, 7, 1962.

Kuller, L.H.; Kramer, K.; and Fisher, R. Changing trends in cirrhosis and fatty liver mortality. *Am J Public Health*, 59:1124-1133, 1969.

Kuttner, R.E., and Lorincz, A.B. Promiscuity and prostitution in urbanized Indian communities. *Ment Hyg*, 54:79-91, 1970.

Lawrence, J.J., and Maxwell, M.A. Drinking and socioeconomic status. In: Pittman, D.J., and Snyder, C.R., eds. *Society, Culture, and Drinking Patterns.* New York: John Wiley and Sons, 1962.

Lawson, A.A., and Mitchell, I. Patients with acute poisoning seen in a general medical unit (1960-1971). *Br Med J*, 4(5833):153-156, 1972.

Lecoq, R., and Fouquet, P. A propos de l'alcoolisme feminin. (Concerning alcoholism among women.) *Gas Hop* (Paris), 127:477-483, 1955.

Leczycka, K. Clinic of female alcoholism. *Problemy Alkoholizmu* (Warsaw) 7:5-7, 1972. Excerpted in: *Women and Mental Health: A Bibliography.* NIMH, DHEW Publication No. (ADM) 75-142, 1974.

Lelbach, W.K. Organic pathology related to volume and pattern of alcohol use. In: Gibbins, R.J.; Israel, Y.; Kalant, H.; Popham, R.E; Schmidt, W.; and Smart, R.G., eds. *Research Advances in Alcohol and Drug Problems.* New York: John Wiley and Sons, 1974. p. 93.

Lemere, F. What happens to alcoholics? *Am J Psychiatry*, 109:674-676, 1953.

Lemere, F.; O'Hollaren, P.; and Maxwell, M.A. Sex ratio of alcoholic patients treated over a 20-year period. *Q J Stud Alcohol*, 17:437-442, 1956.

Lemert, E.M. The occurrence and sequence of events in the families to alcoholism. *Q J Stud Alcohol*, 21:679-697, 1960.

Lemert, E.M. Dependency in married alcoholics. *Q J Stud Alcohol*, 23:590-609, 1962.

Lemoine, P.; Harousseau, H.; Borteyru, J.P.; and Menuet, J.C. Les enfants de parents alcoaliques. Anomalies observees. A propos de 127 cas. (The children of alcoholic parents. Anomalies observed in 127 cases.) *Ouest Medical*, 25:477-482, 1968.

Lengrand, J.P. Contributions a l'etude de l'alcoolisme feminin dans le Nord. (Contributions to the study of female alcoholism in the North of France.) *Zentralbl Gesamte Neurologie und Psychiatr* (Berlin), 180:195-196, 1965.

Lerner, H. Adaptive and pathogenic aspects of sex-role stereotypes: Implications for parenting and psychotherapy. *Am J Psychiatry*, 135:48-52, 1978.

Lester, B.K. Alcoholism and women. *Alcohol Tech Rep*, 4(1):1-3, 1975.

Lester, B.K.; Rundell, O.H.; Cowden, L.C.; and Williams, H.L. Chronic alcoholism, alcohol, and sleep. In: Gross, M.M., ed. *Alcohol Intoxication and Withdrawal: Experimental Studies, Advances in Experimental Medicine and Biology, Vol XXXV.* New York: Plenum Press, 1973, pp. 261-279.

Lester, D. Etiology of alcoholism. In: Chafetz, M.E., ed. *Research, Treatment, and Prevention Proceedings, 4th Annual Alcoholism Conference, NIAAA.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1975.

Levi-Minizi, S.; Mareggiati, M.; and Tagliavina, S. In tema di alcoolismo femminile. (On the theme of alcoholism in women.) *Rassegna di Studi Psichiatrici* (Siena), 54:403-427, 1965.

Levine, D.G.; Preston, P.A.; and Lipscomb, S.G. Historical approach to understanding drug abuse among nurses. *Am J Psychiatry*, 131(9):1036-1037, 1975.

Levine, H. On women and on one woman. In: MacLennon, A., ed. *Women: Their Use of Alcohol and Other Legal Drugs.* Toronto: Addiction Research Foundation, 1976.

Levine, J. The sexual adjustment of alcoholics: A clinical study of a selected sample. *Q J Stud Alcohol*, 16:675-680, 1955.

Levine, S. Libido of female alcoholics. (Questions and Answers.) *Med Asp Hum Sexuality*. New York: 9(9):99, 1975.

Levy, S.J. and Doye, K.M. Attitudes toward women in a drug treatment program. *J Drug Issues*, 4:428-434, 1974.

Limoges, T. L'alcoolisme de la femme. (Alcoholism in women.) *Bull Quebec Soc Criminol*, 3(2):35-44, 1964.

Lindbeck, V. The woman alcoholic, a review of the literature. *Int J Addict*, 7:567-580, 1972.

Lindbeck, V. *The Woman Alcoholic.* Public Affairs Pamphlet No. 529, Public Affairs Committee, New York, 1975.

Lipanov, R.G. K kharakteristike suitsidal'nykh deistvii psikhicheskikh bol'nykh. (The characteristics of suicidal actions in mental patients.) *Zh Nevropatol Psikhiatri*, 71:137-140, 1971.

Lipscomb, W.R. Mortality among treated alcoholics: A three-year followup. *Q J Stud Alcohol*, 20:596-603, 1959.

Lipsitt, P.D., and Lelos, D. Relationship of sex-role identity to level of ego development in habitual drug users. *Proc 80th Ann Conv Am Psychol Assoc*, 1972.

Lisansky, E.S. Alcoholism in women: Social and psychological concomitants: Social history data. *Q J Stud Alcohol*, 18:588-623, 1957.

Lisansky, E.S. The woman alcoholic. *Ann Am Acad Polit Soc Sci*, 315:73-81, 1958.

Lisansky, E.S. The etiology of alcoholism: The role of psychological predisposition. *Q J Stud Alcohol*, 21:314-343, 1960.

Lischner, M.W.; Alexander, J.F.; and Galambos, J.T. Natural history of alcoholic hepatitis. I. The acute disease. *Am J Dig Dis*, 16:481, 1971.

Litman, G. The woman alcoholic: Incidence, stereotype, and treatment. *Aust Psychol*, 10(2):252-253, 1975 (conference abstract).

Litmanovich, A.A. Osobennosti techenija i lechenija khronicheskogo alkoholizma u zhenshchin. (Peculiarities in the course and treatment of chronic alcoholism in women.) *Zh Nevropatol Psikhiatr* (Moscow), 60:1515-1517, 1960.

Little, R.E., and Schultz, F.A. "Drinking Behavior in 156 Pregnant Women." Alcohol and Drug Problems Association Conference, 1974.

Little, R.E.; Schultz, F.A.; and Mandell, W. Drinking during pregnancy. *J Stud Alcohol*, 37:375-379, 1976.

Lolli, G. The hangover in relation to the theory and treatment of alcohol addiction. *Q J Stud Alcohol*, 7:193-213, 1946.

Lolli, G. The addictive drinker. *Q J Stud Alcohol*, 10:404-414, 1949.

Lolli, G. Alcoholism in women. *Conn Rev Alcohol*, 5:9-11, 1953.

Lolli, G., and Rubin, M. The effect of concentration of alcohol on the rate of absorption and the shape of the blood alcohol curve. *Q J Stud Alcohol*, 4:57-67, 1943.

Lovallo, W.; Parsons, O.A.; and Holloway, F. Automatic arousal in normal, alcoholic, and brain damaged patients as measured by plethysmograph response to cold pressor stimulation. *Psychophysiology*, 10:166-170, 1973.

Lucero, R.J.; Jensen, K.F.; and Ramsey, C. Alcoholism and teetotalism in blood relatives of abstaining alcoholics. *Q J Stud Alcohol*, 32:183-185, 1971.

Lyons, J.P. New York State Research Institute on Alcoholism, Buffalo, New York, Personal communication, 1978.

Maccoby, N., and Farquhar, J.W. Communication for health: Unselling heart disease. *J Commun*, 25:114-126, 1975.

MacDonald, A.P.; Walls, R.T., Jr.; and LeBlance, R. College female drug users. *Adolescence*, 8:189-196, 1973.

MacKay, J.R.; Murray, A.E.; Hagerty, T.J.; and Collins, L.J. Juvenile delinquency and drinking behavior. *J Health Human Behav*, 4:276-282, 1963.

MacLeod, S.M.; Giles, H.G.; Patzelek, G.; Thiessen, J.J.; and Sellers, E.M. "Diazepam actions and plasma concentrations following ethanol ingestion. *Eur J Clin Pharm*, 11:1-5, 1977.

Madeddu, A.; Luchesi, M.; and Rivelta, G.C. Alcoolisme et tuberculose: Aspects clinicostatistiques de l'association alcoolisme-tuberculose pulmonaire chez la femme. (Alcoholism and tuberculosis: Clinical statistical aspects of the alcoholism-pulmonary tuberculosis association in the female.) *Rev de l'Alcoolisme* (Paris), 1969.

Mangano, M., and Mangano, M.G. Alcoolismo della donna (Alcoholism in woman.) *Radovi Instituta az Proucavanje i Suzbijanje Alkoholizma*, (Zabreb), 1:37-67, 1966.

Manske, H., and Grosse, F.R. Inkomplettes und komplettes 'fetal alkohol-syndrom', bei drei kindern einer trinkerin. (Incomplete and complete fetal alcohol syndrome, in three children of a female heavy drinker.) *Med Welt*, 26:709-712, 1975.

Margulies, R.Z.; Kessler, R.C.; and Kandel, D.B. A longitudinal study of onset of drinking among high school students. *J Stud Alcohol*, 38:897-912, 1977.

Martin, J. Fetal alcohol syndrome: Recent findings. *Alcohol Health Res World*, 1(3):8-12, 1977.

Masi, D. "The Employed Alcoholic Woman: Her Problems, Solution and Outreach Strategies." Paper presented at the National Council on Alcoholism Meeting. San Diego, 1977.

Massam, A. Female drinking on increase. *The Journal*, 2(10):1, 1973.

Massot; Hamel; and Deliry. Alcoolisme feminin: donnees statistiques et psychopathologiques. (Alcoholism in women: Statistical and psychopathological data.) *Lyon J Med*, 37:265-269, 1956.

Materi, M. Assertiveness training: A catalyst for behavioral change. *Alcohol Health Res World*, 1:15-22, Summer 1977.

Matthew, H.; Proudfoot, A.T.; Brown, S.S.; and Aitken, R.C.B. Acute poisoning: Organization and workload of a treatment centre. *Br Med J*, 3:489-493, 1969.

Maucevic, V.; Lang, B.; and Ulemek, L.J. Zena i alkoholizam. (Women and alcoholism.) *Anali Bolnice Dr. M. Stojanovic*, (Zagreb), 6(2-3):241-247, 1967.

Mayer, J., and Green, M. Group therapy of alcoholic women ex-prisoners. *Q J Stud Alcohol*, 28:493-504, 1967.

Mayer, J.; Myerson, D.J.; and Needham, M.A. Treatment of the female alcoholic: The former prisoner. *Am J Orthopsychiatry*, 36:248-249, 1966.

Mayfield, D.C., and Coleman, L.L. Alcohol use and affective disorder. *Dis Nerv Syst*, 29:467-474, 1968.

McClelland, D.C.; Davis, W.N.; Kalin, R.; and Wanner, E. *The Drinking Man*. New York: Free Press, 1972.

McConnell, P.C., and Beach, H.D. The effects of ethanol on the acquisition of conditioned GSR. *Q J Stud Alcohol*, 29:845-855, 1968.

McCord, W., and McCord, J. A longitudinal study of the personality of alcoholics. In: Pittman, D.J., and Snyder, C.R., eds. *Society, Culture, and Drinking Patterns*, New York: John Wiley, 24:413-430, 1962.

McCord, W.; McCord, J.; and Grudeman, J. *Origins of Alcoholism*. Stanford, Calif.: Stanford University Press, 1960.

McGuire, M.T.; Stein, S.; and Mendelson, H.H. Comparative psychosocial studies of alcoholic and nonalcoholic subjects undergoing experimentally induced ethanol intoxication. *Psychosom Med*, 28:13-26, 1966.

McKinlay, A.P. The Roman attitude toward women's drinking. In: McCarthy, R.G., eds. *Drinking and Intoxication*. Glencoe, Ill.: The Free Press, 1959.

McLachlan, J.F.C.; Walderman, R.L.; Birchmore, D.F.; and Marsden, L.R. *The Woman Alcoholic: Summary of a Report*. Manuscript, 1976.

McNamee, H.B.; Mello, N.K.; and Mendelson, J.H. Experimental analysis of drinking patterns of alcoholics: Concurrent psychiatric observations. *Am J Psychiatry*, 124:1063-1069, 1968.

Meadow, A.; Estabridis, H.; and Batallanos, E. La delincuencia femenina. (Female delinquency.) *Rev Cienc Psicol Neur* (Lima), 4(2-3): 145-176, 1967.

Medhus, A. Morbidity among female alcoholics. *Scand J Soc Med*, 2(1):5-11, 1974.

Medhus, A. Conviction for drunkenness: A late symptom among female alcoholics. *Scand J Soc Med*, 3(1):23-27, 1975.

Medhus, A. Criminality among female alcoholics. *Scand J Soc Med*, 3(2):45-49, 1975.

Medhus, A. Female alcoholics and public assistance. *Scand J Soc Med*, 3:143-146, 1975.

Medhus, A. Mortality among female alcoholics. *Scand J Soc Med*, 5:111-115, 1975.

Medhus, A. Venereal diseases among female alcoholics. *Scand J Soc Med*, 3(1):29-33, 1975.

Medhus, A. Female alcoholics: Correlation between sociomedical variables. *Br J Addict*, 71(2):109-113, 1976.

Medhus, A., and Itansson, H. Alcohol problems among female gonorrhea patients. *Scand J Soc Med*, 4(3):141-143, 1976.

Meeks, D.E., and Kelly, C. Family therapy with the families of recovering alcoholics. *Q J Stud Alcohol*, 31:399-413, 1970.

Mello, N.K., and Mendelson, H.H. "Recent Advances in Studies of Alcoholism: An Interdisciplinary Symposium." Rockville, Md.: National Institute of Mental Health and the National Institute on Alcohol Abuse and Alcoholism, 1970.

Mendelson, J.H. Ethanol metabolism in alcoholics. In: *Biological Aspects of Alcohol Consumption, Finnish Foundation for Alcohol Studies*, 20:25-31 1972.

Mendelson, J.H.; LaDou, J.; and Solomon, P. Experimentally induced chronic intoxication and withdrawal in alcoholics; Part 3, psychiatric findings. *Q J Stud Alcohol*. Suppl. No. 2, 40-52, 1964.

Mendelson, W.; Johnson, N.; and Stewart, M.A. Hyperactive children as teenagers: A followup study. *J Nerv Ment Dis*, 153:273-279, 1971.

Menkes, M.M.; Rowe, J.S.; and Menkes, J.H. A twenty-five year followup study on the hyperkinetic child with minimal brain dysfunction. *Pediatrics*, 39:393-399, 1967.

Merari, A. et al. Effects of alcohol on mating behavior of the female rat. *Q J Stud Alcohol*, 34:1095-1098, 1973.

Merkin, A.C. Career on the rocks: The alcoholic woman in the workplace. *Women's Work*, 3:15-17, 28, 1977.

Merry, J.; Reynolds, C.M.; Bailey, J.; and Coppen, A. Prophylactic treatment of alcoholism by lithium carbonate. *Lancet*, 481-482, Sept. 4, 1976.

Meyers, R.D., and Veale, W.L. The determinants of alcohol preference in animals. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism*, Vol. II. New York: Plenum Press, 1972.

Midenet, M.; Midenet, J.; and Desbors, G. Alcoholism in the fifty-year old woman. *Lyon Med J*, 229(5):479-483, 1972.

Mikkelsen, W.P.; Turrill, F.L.; and Kern, W.H. Acute hyaline necrosis of the liver: A surgical trap. *Am J Surg*, 116:266-272, 1968.

Milgram, G.G. A historical review of alcohol education research and comments. *J Alc Drug Educ*, 21(2):1-16, 1976.

Miller, G.H., and Agnew, M. The Lederman model of alcohol consumption: Description, implications and assessment. *Q J Stud Alcohol*, 35:877-898, 1974.

Miller, J.S.; Sensenig, J.; Stocker, R.B.; and Campbell, R. Value patterns of drug addicts as a function of race and sex. *Int J Addict*, 8:589-598, 1973.

Mitchell, H.E. The interrelatedness of alcoholism and marital conflict. *Symposium*, 1958.

Mitchell, H.E. "Interpersonal perceptions theory applied to conflicted marriages in which alcoholism is and is not a problem. *Am J Orthopsychiat*, 29:547-559, 1959.

Mitchellson, M.; Davidson, J.; Hawks, D.; Hitchins, L.; and Malone, S. Sedative abuse by heroin addicts. *J Psychodel Drug*, 4:123-131, 1971.

Mogar, R.E.; Wilson, W.M.; and Helm, S.T. Personality subtypes of male and female alcoholic patients. *Int J Addict*, 5:99-113, 1970.

Montague, A. *Life Before Birth*. New York: Signet, 1965.

Moon, J.R. Alcoholism in Australia in 1975. *Ann NY Acad Sci*, 273:47-77, 1976.

Moore, R.A. The prevalence of alcoholism in a community general hospital. *Am J Psychiatry*, 128:638-639, 1971.

Moore, R.A. "The diagnosis of alcoholism in a psychiatric hospital: A trial of the Michigan Alcoholism Screening Test (MAST). *Am J Psychiatry*, 128:1565-1569, 1972.

Moos, R.H. Fluctuations in symptoms and moods during the menstrual cycle. *J Psychosom Res*, 13:37-44, 1969.

Morella, C.A. The female alcoholic in history, culture, and jurisprudence. *Alcohol Dig Ann*, 3:1974-1975. Rockville, Md: Information Planning Associates, 1974.

Morgan, M.Y., and Sherlock, S. Sex-related differences among 100 patients with alcoholic liver disease. *Br Med J*, 1:939-941, 1977.

Morrison, J.R. The family histories of manic-depressive patients with and without alcoholism. *J Nerv Ment Dis*, 160:227-229, 1975.

Morrissey, E., and Schuckit, M. Data presented at the National Drug Abuse Conference, San Francisco, May 1977. *Physician's Alcohol Newsletter*, 12:1, June 1977.

Mottin, J.L. Drug-induced attenuation of alcohol consumption: A review and evaluation of claimed, potential, or current therapies. *Q J Stud Alcohol*, 34:444-472, 1973.

Moynihan, D.P. *The Negro Family: The Case for National Action*. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1965.

Mulford, H.A. Drinking and deviant drinking, U.S.A. *Q J Stud Alcohol*, 25:634-650, 1963.

Mulford, H.A. Women and men problem drinkers. *J Stud Alcohol*, 38:1624-1639, 1977.

Mulford, H.A. and Miller, D.E. Drinking in Iowa. IV. Pre-occupation with alcohol and definitions of alcohol, heavy drinking, and trouble due to drinking. *Q J Stud Alcohol*, 21:279-291, 1960.

Mulvihill, J. et al. Fetal alcohol syndrome: Seven new cases. *Am J Obstet Gynecol*, in press.

Mulvihill, J. and Yeager, A.M. Fetal alcohol syndrome. *Teratology*, 13(3):345-348, 1976.

Murcia-Valcarcel, E. L'alcoolisme chez la femme. (Alcoholism in women.) *Rev de l'Alcoolisme*, 15:285-298, 1969. (32:231-232, 1971.)

Myerson, D.J. Clinical observations on a group of alcoholic prisoners, with special reference to women. *Q J Stud Alcohol*, 20:555-572, 1959.

Myerson, D.J. A therapeutic appraisal of certain married alcoholic women. *Int Psychiatry Clin*, 3(2):143-157, Summer 1966.

Myerson, D.J.; MacKay, J.; Wallens, A.; and Neiberg, N. A report of a rehabilitation program for alcoholic women prisoners. *Q J Stud Alcohol*. Suppl. No. 1, 151-157, 1961.

Nachin, C.; Lengrand, J.P.; and Crepin, D. Sur l'alcoolisme feminin. (On alcoholism in women.) *Ann Med Psychol*, 1222:259-263, 1964.

Nachin, C.; Lengrand, J.P.; and Crepin, D. Sur le traitement de l'alcoolisme feminin en milieu psychiatrique. (On the treatment of female alcoholism in a psychiatric milieu.) *Lille Med*, 10:302-305, 1965.

Naitoh, P. The effects of alcohol on the autonomic nervous system of humans: Psychophysiological approach. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism*. New York: Plenum Press, 1972.

Nathan, P.E., and Bridell, D.W. Behavioral assessment and treatment of alcoholism. In: Kissin, B. and Begleiter, H., eds. *The Biology of Alcoholism*, Vol. V. New York: Plenum Press, 1977.

National Center for Alcohol Education. "Program Overviews of the Decisions and Drinking Series." Arlington, Va: NCAE, 1977.

National Clearinghouse for Drug Abuse Information Report Series 29(1). *Neonatal Narcotic Dependence*, NCDAI, February 1974.

National Council on Alcoholism Criteria Committee. Criteria for the diagnosis of alcoholism. *Ann Int Med*, 77:127-135, 1972.

National Institute on Alcohol Abuse and Alcoholism. *Alcohol and Health; First Special Report to the U.S. Congress.* DHEW Publication No. (HSM) 73-9031. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, December 1971.

National Institute on Alcohol Abuse and Alcoholism. *Alcohol and Health: Second Special Report to the U.S. Congress.* DHEW Publication No. (ADM) 74-124. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1974.

National Institute on Alcohol Abuse and Alcoholism. *The Whole College Catalog about Drinking: A Guide to Alcohol Abuse Prevention.* DHEW Publication No. (ADM) 77-361. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1976.

Nau, E. Kindesmisshandlung. (Child abuse.) *Montasschrift fur Kinderheilkunde* (Vienna), 115:192-194, 1967.

Nellis, M., ed. *Drugs, Alcohol, and Women: A National Source Book.* Sponsored by the National Institute on Drug Abuse, Program for Women's Concerns, 24-26 October, 1975, Miami Beach, Florida. Washington, D.C.: National Research and Communications Associates, 1976.

Newman, M.F., and Hilgard, J.R. Is alcoholism in men sometimes an alternative to schizophrenia in women? *Psychiatry Dig*, 28(7):33-37, 1967.

Noble, D. Psychodynamics of alcoholism in a woman. *Psychiatry*, 12:413-425, 1949.

Noble, E. Testimony Before the Oversight Hearings of the Senate Subcommittee on Alcohol and Narcotics, Feb. 3, 1976.

Noel, N.E., and Lisman, S.A. "Alcohol, Depression, and Learned Helplessness in Females." Paper presented at the AABT, Atlanta, December 1977*a*.

Noel, N.E., and Lisman, S.A. "The Effects of Learned Helplessness on Alcohol Consumption." Paper presented at the Eastern Psychological As sociation, Boston, April 1977*b*.

Norris, J.L. Alcoholics Anonymous and other self-help groups. In: Tarter, R.E., and Sugerman, A.A., eds. *Alcoholism: Interdisciplinary Approaches to an Enduring Problem*. Reading, Mass.: Addison-Wesley, 1976.

Nørvik, J., and Nielsen, B. A followup study of 221 alcohol addicts in Denmark. *Q J Stud Alcohol*, 17:633-642, 1956.

Norwicki, S., and Hopper, E.E. Locus of control correlates in an alcoholic population. *J Consult Clin Psychol*, 42:735, 1974.

Oakley, R.P. Feminine alcoholism. Presented at the NIAAA Federal Region II Conference, New York, December 5, 1973. *Physician's Alcohol Newsletter*, 9:4, 1974.

Orbitz, F.W., and Swanson, M.K. Control orientation in women alcoholics. *J Stud Alcohol*, 37(5):694-697, 1976.

Ohman, J.E., and Friedman, S. Trends in admissions to a State hospital, 1942-1964. *Arch Gen Psychiatry*, 13:544-551, 1965.

Olin, J.S.; Devenyi, P.; and Weldon, K.L. Uric acid in alcoholics. *Q J Stud Alcohol*, 34:1202-1207, 1973.

O'Malley, K.; Stevenson, I.H.; and Crooks, J. Impairment of human drug metabolism by oral contraceptive steroids. *Clin Pharmacol Ther*, 13:552-557, 1972.

Orford, J.; Oppenheimer, E.; Egert, S.; Hensman, C.; and Guthrie, S. Cohesiveness of alcoholism-complicated marriages and influence on treatment outcome. *Br J Psychiatry*, 128:318-339, 1976.

Orford, J.; Waller, S.; and Peto, J. Drinking behavior and attitudes and their correlates among university students in England. *Q J Stud Alcohol*, 35:1316-1374, 1974.

Ottenberg, M. Like the song says, "a hundred men and a girl": An attempt to make possible the treatment of a small minority of women in a male-dominated therapeutic community. *Proc Nat Drug Abuse Conf.* Chicago, Mar. 3, 1974.

Ouellette, E.M., and Rosett, H.L. A pilot prospective study of the fetal alcohol syndrome. *Ann NY Acad Sci*, 273:118-129, 1976.

Palmer, R.H.; Ouelette, E.M.; Warner, L.; and Leichtman, S.R. Congenital malformations in offspring of a chronic alcoholic mother. *Pediatrics*, 53(4):490-494, 1974.

Palola, E.G.; Dorpat, T.L.; and Lorson, W.R. Alcoholism and suicidal behavior. In: Pittman, P.J., and Snyder, C.R., eds. *Society, Culture and Drinking Patterns.* New York: John Wiley and Sons, 1962. pp. 511-534.

Paolino, T.J., and McCrady, B.S. Joint admission as a treatment modality for problem drinkers, a case report. *Am J Psychiatry*, 133:222-224, 1976.

Paolino, T.J., and McCrady, B.S. *The Alcoholic Marriage, Alternative Perspectives.* New York: Grune and Stratton, 1977.

Paolino, T.J.; McCrady, B.; and Diamond, S. Psychological disturbances in spouses of alcoholics: An empirical assessment. *J Stud Alcohol*, 37(11):1600-1608, 1976.

Paraf, J., and Klotz, H.P. Frequence actuelle plus grande des manifestations alcooliques chez la femme que chez l'homme. (Greater frequency of

manifestations of alcoholism in women than in men.) *Bull Soc Med Hop* (Paris), 49:1373-1375, 1933.

Paredes, A. Marital sexual factors in alcoholism. *Medical Aspects of Human Sexuality*, April 1973.

Paredes, A.; Hood, W.R.; and Seymour, H. Sobriety as a symptom of alcohol intoxication: A clinical commentary on intoxication and drunkenness. *Br J Addict*, 70:233-243, 1975.

Parker, D.A., and Harman, M.S. "The Distribution of Consumption Model of Prevention: A Critical Assessment." Paper presented at the NIAAA Seminar on Normative Approaches to the Prevention of Alcohol Related Problems, San Diego, April 1977.

Parker, D.A., and Harman, M.S. The distribution of consumption model of prevention of alcohol problems: A critical assessment. *J Stud Alcohol*, 39:377-399, 1978.

Parker, F.B. Sex-role adjustment in women alcoholics. *Q J Stud Alcohol*, 33:647-657, 1972.

Parker, F.B. Sex-role adjustment and drinking disposition of women college students. *J Stud Alcohol*, 36(11):1570-1573, 1975.

Parsons, T., and Bales, R.F. *Family: Socialization, and Interaction Process.* New York: Free Press, 1955.

Pashchenkov, S.Z. O klinicheskom techenii alkogolizma u bol'nykh semeinoi otyagoshchennost. (The clinical evolution of alcoholism in patients with a familial taint.) *Klin Med (Mosk)*, 52(3):93-96, 1974.

Pastor, P. "The Control of Public Drunkenness: Comparison of Legal and Medical Models." Unpublished doctoral dissertation, Yale University, Department of Sociology, 1975.

Pattison, E.M.; Coe, R.; and Rhodes, R.J. Evaluation of alcoholism treatment. *Arch Gen Psychiatry*, 20:478-488, 1969.

Peeples, E.E. *Taste Sensitivity to Phenylthiocarbamide in Alcoholics.* Master's thesis, Stetson University, 1962.

Pemberton, D.A. Comparison of the outcome of treatment in female and male alcoholics. *Br J Psychiatry*, 113:367-373, 1976.

Peneva, M. Alkoholizmut vsred zhenite v. Gr. Sofia. (Alcoholism among women in Sophia, Bulgaria.) *Nevrol Psikhiatr Nevrokhirurgiia* (Sophia), 8(6):451-456, 1969.

Pequignot, G. Les problemes nutritionnels de la societe industrielle. (Nutrition problems of industrial society). *Vie Med Canad Franc*, 3:216-225, 1974.

Pequignot, G.; Chabert, C.; Eydoux, H.; and Courcoul, M.A. Increased risk of liver cirrhosis with intake of alcohol. *Rev Alcohol*, 20:191, 1974.

Pessina, G. Note sull'alcoolismo femminile nella Provincia di Firenze. (Note on female alcoholism in the Province of Firenze.) *Rassegna di Studi Psichiatrici*, 49:532-535, 1960.

Peters, U.H., and Gille, G. Über die körperlichen gründe körperlich begründbarer psychosen (On the somatic causes of somatically based psychoses.) *Dtsch Med Wschr*, 98:967-970, 1973.

Pfautz, H.W. The image of alcohol in popular fiction: 1900-1904 and 1946-1950. *Q J Stud Alcohol*, 23:131-146, 1962.

Pfeffer, A.Z.; Friedland, P.; and Wortis, S.B. Group psychotherapy with alcoholics: Preliminary report. *Q J Stud Alcohol*, 10:198-216, 1949.

Philipps, G.B., and Davidson, C.S. Acute hepatic insufficiency of the chronic alcoholic. *Arch Intern Med*, 94:585-603, 1954.

Pinoli, G.; Monti, R.; and Campogrande, M. Problemi psicosomatici dell'etilismo campo ginecologico. (Psychosomatic problems of alcoholism in the field of gynecology.) *Med Psicosom.* (Rome), 12:364-377, 1967.

Pishkin, V., and Thorne, F. Factorial structure of the dimensions of femininity in alcoholic, schizophrenic, and normal populations. *J Clin Psychol*, 53(1): 10-17, 1977.

Pisk, G. Uber dipsomanie bei frauen. (On dipsomania in woman.) *Mschr Psychiat Neurol*, 93:218-235, 1936.

Pitts, F.N., Jr., and Winokur, G. Affective disorcers; VII. Alcoholism and affective disorders. *J Psychiatr Res*, 4:37-50, 1966.

Plaut, T.F. *Alcohol Problems: A Report to the Nation by the Cooperative on the Study of Alcoholism*. New York: Oxford University Press, 1967.

Podolsky, E. The woman alcoholic and premenstrual tension. *J Am Med Women's Assoc*, 18:816-818, 1963.

Pohlisch, K. Socziale and personliche bedingungen des chronischen alcoholismus. In: *Sammlung Psychiatrischer and Neurologischer Einzeldarstellungen*, Leipsig, Germany: G. Thieme Verlag, 1933.

Ponsor, L. et al. The A-B-C's of drug treatment for women. *Stash Cap*, 8(5):May 1976.

Popham, R.E.; Schmidt, W.; and De Lint, J. *The Prevention of Alcoholism: Epidemiological Studies of the Effects of Government Control Measures.* Toronto: Addiction Research Foundation, 1971.

Price, T.R., and Silberfarb, P.M. Disulfiram-induced convulsions without challenge by alcohol. *J Stud Alcohol*, 37(7):980-982, 1976.

Rachal, J.V. et al. *A National Study of Adolescent Drinking Behavior, Attitudes and Correlates.* Research Triangle Park, N.C.: Research Triangle Institute, 1975.

Rae, J.B. The influence of the wives on the treatment outcome of male alcoholics: A followup study at two years. *Br J Psychiatry*, 120:601-613, 1972.

Rae, J.B., and Drewery, J. Interpersonal patterns in alcoholic marriages. *Br J Psychiatry*, 120:615-621, 1972.

Ramsey, J. Women alcoholics: Hopeless or treatable? *Fam Cir*, 2(10):12, 58, 62, February 1974.

Rangno, R.E. Epidemiology and therapy of suicidal drug intoxication. In: Sellers, E.M., ed. *Clinical Pharmacology of Psychoactive Drugs.* Toronto: Addiction Research Foundation, 1975. pp. 43-54.

Rankin, J.G.; Schmidt, W.; Popham, R.E.; and De Lint, J. Epidemiology of alcoholic liver disease—insights and problems. In: Khanna, J.M.; Israel, Y.; and Kalant, H., eds. *Alcoholic Liver Path.* Toronto: Addiction Research Foundation, 1975.

Rathod, H.; Gregory, E.; Blows, D.; and Thomas, G.H. A two-year followup study of alcoholic patients. *Br J Psychiatry*, 112, 1966.

Rathod, H., and Thompson, I.G. Women alcoholics: A clinical study. *Q J Stud Alcohol*, 32:45-52, 1971.

Ravasini, C.; Malvasi, Z.; and Mangoni, A. Osservazioni cliniche e considerazioni psicopathologiche sull'alcoolismo femminile. (Clinical observations and psychopathological considerations on alcoholism among women.) *Riv Psichiatr* (Rome), 3(1):69-92, 1968.

Reckless, J.B. Enforced outpatient treatment of advantaged pseudosociopathic neurotically disturbed young women. *Can Psychiatric Assoc J*, 15(4):335-345, 1970.

Redmond, G.P., and Cohen, G. Sex difference in acetaldehyde exhalation following ethanol administration in C57 BL mice. *Nature*, 236:117-119, 1972.

Regan, M. Personality differences between acute and chronic female alcohol abusers. *Alcohol Tech Rep*, 5(1):7-10, 1976.

Regan, M., and Westwood, W.W. Alcohol abuser's profile on the Taylor-Johnson Temperament Analysis. *Alcohol Tech Rep*, 5(4):69-71, 1976.

Reich, L.H.; Davies, R.K.; and Himmelhoch, J.M. Excessive alcohol use in manic-depressive illness. *Am J Psychiatry*, 131:83-86, 1974.

Reich, T.; Winokur, G.; and Mullaney, J. The transmission of alcoholism. In: Fieve, R., and Rosenthal, D., eds. *Genetic Research in Psychiatry.* Baltimore: Johns Hopkins Press, 1975.

Reich, T.; Winokur, G.; and Mullaney, J. Transmission of alcoholism. *Proc Am Psychopath Assoc*, 63:259-271, 1975.

Reiff-Ross, E., and Adams, H.B. Admissions and readmissions to an alcohol detoxification unit for women: Is this program a "revolving door?" In: *Alcohol Abuse Among Women: Special Problems and Unmet Needs.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1976.

Reynolds, I.; Harnas, J.; and Gallagher, H. Drinking and drug-taking patterns of 8,516 adults in Sydney. *Med J Aust*, 2:782-785, 1976.

Richman, A.; Jackson, G.; and Trigg, H. Followup of methadone maintenance patients hospitalized for abuse of alcohol and barbiturates. *Proc Fifth Nat Conf Methadone Treatment*, 1973. pp. 1484-1503.

Riemenschneider, H. Veranderung des personlichkeitsbildes alkoholkranker frauen wahrend der entziehungsbehandlung. (Changes in the personality profile of women alcoholics during withdrawal treatment.) *Suchtgefahren* (Hamburg), 17(2):16-18, 1971.

Rieth, E. Gruppentherapie von alkoholikern in der stationaren Behandlung. (Group therapy of alcoholics in ward management.) *Suchtgefahren* (Hamburg), 17(3):12-15, 1971.

Rieth, E. Soziologische und psychologische ursachen der sucht bei frauen. (Sociological and psychological causes of addiction in women.) *Z Allgemeinmed*, 47:852-855, 1971.

Rieth, E. Die personlichkeit des alkoholikers (The personality of the alcoholic). *Fursorger*, 42:1-13, 1974.

Riley, J.W. Jr., and Marden, C.F. The social pattern of alcoholic drinking. *Q J Stud Alcohol*, 8, 1947.

Rimmer, J. Psychiatric illness in husbands of alcoholics. *Q J Stud Alcohol*, 63:29-49, 1968.

Rimmer, J.; Pitts, F.N.; Reich, T.; and Winokur, G. Alcoholism. II. Sex, socioeconomic status and race in two hospitalized samples. *Q J Stud Alcohol*, 32:942-952, 1971.

Rimmer, J.; Reich, T.; and Winokur, G. Alcoholism: V. Diagnosis and clinical variation among alcoholics. *Q J Stud Alcohol*, 33:658-666, 1972.

Ringer, C.; Kiifner, H.; Antons, K.; and Feuerlein, W. The NCA criteria for the diagnosis of alcoholism: An empirical evaluation study. *J Stud Alcohol*, 38:1259-1273, 1977.

Robins, E.; Murphy, G.E.; Wilkinson, R.H., Jr.; Gassner, S.; and Kayes, J. Some clinical observations in the prevention of suicide: Based on a study of 134 successful suicides. *Am J Public Health*, 49:888-899, 1959.

Robins, L.N. *Deviant Children Grown Up*. Baltimore: Williams and Wilkins, 1966.

Robinson, T. *Women and Alcohol*. Prepared for the North Carolina Women's Political Caucus, September 1976.

Rogowski, E. Kobiety dalkoholizmie. (Women's views on Alcoholism.) *Probl Alkohol* (Warsaw), 5(12):13-14, 1970.

Rollins, R.L. Treatment of female inebriate patients at Dorothea Dix Hospital. *NC Med J*, 22:226-227, May 1961.

Room, R. Governing images and the prevention of alcohol problems. *Prev Med*, 3:11-23, 1974.

Room, R. Minimizing alcohol problems. In: *Proceedings of the Fourth Annual Alcoholism Conference of the National Institute on Alcohol Abuse and Alcoholism*, June 1974. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1975.

Room, R. Policy initiatives in alcohol problems prevention. Draft position paper prepared for NIAAA. Berkeley, Calif.: Social Research Group, 1976.

Room, R. "Areas for Development in NIAAA Prevention Programs." Working paper prepared for NIAAA under Contract ADM-281-76-0027. Berkeley, Calif.: Social Research Group, 1977.

316-863 0 - 80 - 17

Root, A.W. et al. Hypothalamic pituitary function in the fetal alcohol syndrome. *J Pediatr*, 87:585-588, 1975.

Rosen, A.C. A comparative study of alcoholic and psychiatric patients with the MMPI. *Q J Stud Alcohol*, 21:253-266, 1960.

Rosenbaum, B. Married women alcoholics at the Washington Hospital. *Q J Stud Alcohol*, 19:79-89, 1958.

Rosenberg, C.M., and Buttsworth, F.J. Anxiety in alcoholics. *Q J Stud Alcohol*, 30:729, 1969.

Rosett, H.L. Effects of maternal drinking on child development: An introductory review. *Ann NY Acad Sci*, 273:115-117, 1976.

Rosett, H.L., and Weiner, L. "Pregnancy and Alcohol Use: A Boston City Hospital Survey." Paper presented at the Symposium on the Consequences of Alcohol and Drug Abuse During Pregnancy on the Mother and Her Offspring, New York City, October 1975.

Rosett, H.L., and Weiner, L. "Pregnancy and Alcohol Use: A Boston City Hospital Study." Testimony before the Senate Subcommittee on Alcoholism and Narcotics, Sept. 29, 1976.

Ross, C.F.J. Comparison of hospital and prison alcoholics. *Br J Psychiatry*, 118:75-78, 1971.

Rouse, B., and Ewing, J.A. Marijuana and other drug use by women college students: Associated risk-taking and coping activities. *Am J Psychiatry*, 30(4):486-491, 1973.

Rubington, E. The hidden alcoholic. In: Rubington, E. *Alcohol Problems and Social Control*. Columbus, Ohio: Charles E. Merrill, 1973.

Rudolph, M. Addicted Women in the Community. Third Annual Conference, Association of Halfway House Alcoholism Programs, 1968.

Rudolph, M. How society perceives the alcoholic woman. *Association of Halfway House Alcoholism Programs of North America*, St. Paul, Minn., 1975.

Ruedy, J. Acute drug poisoning in the adult. *Can Med Assoc J*, 109(9):603-608, 1973.

Rundell, O.H.; Lester, B.K.; Griffiths, W.J.; and Williams, H.L. Alcohol and sleep in young adults. *Psychopharmacologie*, 26:201-218, 1972.

Rushing, W.A. Suicide and the interaction of alcoholism (liver cirrhosis) with the social situation. *Q J Stud Alcohol*, 30:93-103, 1969.

Russell, M. "Intrauterine Growth in Infants Born to Women With Alcohol-Related Psychiatric Disorders." 7th Annual NCA-AMSA Medical-Scientific Conference, 1976.

Sabot, L.B.; Gross, M.; and Halpert, E. A study of acute alcoholic psychoses in women. *Br J Addict*, 63(1-2):29-49, 1968.

Safer, D.J., and Allen, R.P. *Hyperactive Children: Diagnosis and Management*. Baltimore: University Park Press, 1976.

Saghir, M.T.; Robins, E.; Walbran, B.; and Gentry, K.A.; Homosexuality. IV: Psychiatric disorders and disability in the female homosexual. *Am J Psychiatry*, 127:147-154, 1970.

Salcedo, S. Liberate the female alcoholic: Initial results of a two-year study. *J Perth Amboy Gen Hosp*, 3(4):32-35, 1974.

Sampliner, R., and Iber, F. Dyphenythydantoin control of alcohol withdrawal seizures. *JAMA*, 230:1430-1432, 1974.

Sanchez-Dirks, R. "Women and Alcoholism." Food and Drug Administration speech, January 1975.

Sandmaier, M. "Women and Alcohol Abuse: A Strategy for Prevention." Paper presented at the Annual Meeting of the American Public Health Association, October 1976.

Sandmaier, M. *Alcohol Programs for Women: Issues, Strategies and Resources.* Report for NCALI, 1976.

Sandmaier, M. Women helping women: Opening the door to treatment. *Alcohol Health Res World*, 1(5):17-23, 1977.

Sandor, S. The influence of aethyl-alcohol on the developing chick embryo. *Revue Roumaine d'Embryologie et de Cytologie, Serie d'Embryologie*, 5:167-171, 1968.

Sandor, S., and Amels, D. The action of aethanol on the prenatal development of albino rats. *Revue Roumaine d'Embryologie et de Cytologie, Serie d'Embryologie*, 8:105-118, 1971.

San Mateo County Department of Public Health and Welfare. *Student Drug Use Surveys, 1968-1971.* San Mateo, Calif., 1971.

Saule, H. Fetales alkohol-syndrom: Ein fallbericht. *Klin Paediatr*, 186:452-455, 1974.

Schaefer, O. Alcohol withdrawal syndrome in a newborn infant of a Yukon Indian mother. *Can Med Assoc J*, 87:1333-1334, 1962.

Schaffner, F., and Popper, H. Alcoholic hepatitis in the spectrum of ethanol-induced liver injury. *Scand J Gastroent* (Supp. 7), 5:69, 1970.

Schmidt, W., and De Lint, J. Mortality experiences of male and female alcoholic patients. *Q J Stud Alcohol*, 30 A(1):112-118, 1969.

Schmidt, W., and De Lint, J. Causes of death of alcoholics. *Q J Stud Alcohol*, 33(1):171-185, 1972.

Schmidt, W., and Popham, R.E. The single distribution theory of alcohol consumption: A rejoinder to the critique of Parker and Harman. *J Stud Alcohol*, 39:400-419, 1978.

Schmidt, W.; Smart, R.G.; and Moss, M.K. *Social Class and the Treatment of Alcoholism.* Toronto: University of Toronto Press, 1968.

Schmolders, G. Der alkoholismus bei frauen und jugendlichen in Finland. (Alcoholism among women and minors in Finland.) *Z SchulgensundhPfl*, 40:271-274, 1927.

Schnall, C., and Wiener, J.S. Clinical evaluation of blood pressure in alcoholics. *Q J Soc Psychiatry*, 19:432-446, 1958.

Schuckit, M. "The Woman Alcoholic." Paper presented at the American Psychiatric Association Meeting, Washington, D.C., May 3, 1971.

Schuckit, M. The alcoholic woman: A literature review. *Psychiatry Med*, 3:37-43, 1972.

Schuckit, M. Sexual disturbance in the woman alcoholic. *Medical Aspects of Human Sexuality*, 6:44-45+, 1972.

Schuckit, M. Alcoholism and sociopathy: Diagnostic confusion. *Q J Stud Alcohol*, 34:157-164, 1973.

Schuckit, M. Depression and alcoholism in women. In: Chafetz, M.E., ed. *Research on Alcoholism: Clinical Problems and Special Populations. Proceedings, 1st Annual Alcoholism Conference, NIAAA.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1973.

Schuckit, M.; Goodwin, D.W.; and Winokur, G. The half-sibling approach in a genetic study of alcoholism. In: Rolf, M.; Robins, L.N.; and Pollack, M., eds. *Life History Research in Psychopathology*. Minneapolis: University of Minnesota Press, 1971.

Schuckit, M.; Goodwin, D.A.; and Winokur, G. A study of alcoholism in half siblings. *Am J Psychiatry*, 128:122-126, 1972.

Schuckit, M.A., and Gunderson, E.K. Alcoholism in Navy and Marine Corps women: A first look. *Military Med*, 140:268-271, 1975.

Schuckit, M., and Morrissey, E.R. Alcoholism in women: Some clinical and social perspectives with an emphasis on possible subtypes. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children.* New York: Grune and Stratton, 1976.

Schuckit, M.A., and Postor, P.A. The elderly as a unique population: Alcoholism. *Alcoholism: Clin Exper Res*, 2:31-38, 1978.

Schuckit, M.; Pitts, F. N., Jr.; Reich, T.; King, L.J.; and Winokur, G. Alcoholism I: Two types of alcoholism in women. *Arch Gen Psychiatry*, 20:301-306, 1969.

Schuckit, M.; Rimmer, J.; Reich, T.; and Winokur, G. Alcoholism: Antisocial traits in male alcoholics. *Br J Psychiatry*, 117:575-576, 1970.

Schuckit, M.; Rimmer, J.; Reich, T.; and Winokur, G. The bender alcoholic. *Br J Psychiatry*, 118:183-184, 1971.

Schuckit, M.A., and Winokur, G. A short-term followup of women alcoholics. *Dis Nerv Syst*, 33:672-678, 1972.

Schultz, A.M. *Women and Addiction.* Report for NIAAA, 1974.

Schultz, A.M. Radical feminism: A treatment modality for addicted women. In: Senay, E.; Shorty, V.; and Alkane, H., eds. *Dev Field Drug Abuse.* Cambridge, Mass.: Schenkman Publishing Co., 1975.

Scida, J., and Vannicelli, M. "Sex-role Conflict and Female Drinking." Unpublished manuscript, Boston University, 1974.

Sclare, A.B. The female alcoholic. *Br J Addict*, 65:99-107, 1970.

Sclare, A.B. Female alcoholics. *Notes on Alcohol and Alcoholism*. B. Edsall, 1972.

Sclare, A.B. Woman alcoholic. *J Stud Alcohol*, 10(3):134-137, 1975.

Scott, E.M. The therapy biography in the treatment of alcoholism. *Q J Stud Alcohol*, 31(1):175-179, 1970.

Scott, E.M., and Manaugh, T.S. Femininity of alcoholic women's preferences on Edwards Personal Preference Schedule. *Psychol Rep*, 38:847-852, 1976.

Secretary of Health, Education, and Welfare. Extent and patterns of use and abuse of alcohol. In: Keller, M., ed. *The First Special Report to the U.S. Congress on Alcohol and Health*. Washington, D.C.: National Institute on Alcohol Abuse and Alcoholism, December 1971. pp. 21-36.

Seiden, A.M. Overview: Research on the psychology of women. I: Gender differences and sexual and reproductive life. *Am J Psychiatry*, 133:995-1007, 1976.

Seiden, A.M. Overview: Research on the psychology of women. II: Women in families, work, and psychotherapy. *Am J Psychiatry*, 133:1111-1123, 1976.

Seidenberg, F.A. The Federal bar versus the ale house bar: Women and public accommodations. *Valparaiso Univ Law Rev*, 5(2):318-325, 1971.

Seixas, J. Children from alcoholic families. In: Estes, N.J. and Heinemann, M.E., eds. *Alcoholism: Development, Consequences, and Interventions*. St. Louis: Mosby, 1977.

Sellers, E.M.; Cooper, S.D.; Zilm, D.H.; and Shanks, C. Lithium treatment during alcoholic withdrawal. *Clin Pharmacol Ther*, 20:199-206, 1976.

Selzer, M. The Michigan Alcoholism Screening Test: The quest for a new diagnostic instrument. *Am J Psychiatry*, 127:1653-1658, 1971.

Selzer, M., and Holloway, W.H. A followup of alcoholics committed to a State hospital. *Q J Stud Alcohol*, 18:98-120, 1957.

Selzer, M.; Vinokur, A.; and Van Rooijen. A self-administered Short Michigan Alcoholism Screening Test (SMAST). J Stud Alcohol, 36:117-126, 1975.

Senseman, L.A. Housewife's secret illness: How to recognize the female alcoholic. *R I Med J*, 49:40-42, 1966.

Seppala, M.; Raiha, N.C.R.; and Tamminen, V. Ethanol elimination in a mother and her premature twins. *Lancet*, 1:1188, 1971.

Sherfey, J.M. Psychopathology and character structure in chronic alcoholism. In: Diethelm, O., ed. *Etiology of Chronic Alcoholism*. Springfield, Ill.: Thomas, 1955.

Sherlock, S. Chronic hepatitis, In: *Diseases of the Liver and Biliary System*. Oxford: Blackwell Scientific Publications, 5th ed., 1975.

Siassi, I.; Crocetti, G.; and Spiro, H.R. Drinking patterns and alcoholism in a blue-collar population. *Q J Stud Alcohol*, 34:917-926, 1973.

Simko, A.; Donaszy, M.; and Kiss, J.G. Alkoholista nok ivasi karakterisztikumaj. (Drinking habits of female alcoholics.) In: Tariska, I.; Gereby, G.; and Kardos, G., eds. *Tanulmanyok az alkoholizmus pszichiatriai kovetkezmenyeirol.* (Results of psychiatric study on alcoholism.) Budapest: Akaholizmus Elleni Orszagos Bizottsag, 1969.

Sjolund, G.C. Women's alcoholic rehabilitation unit utilization in demographic data. *Md Med J*, 20(12):1966.

Skog, O.J. "Does the Same Distributional Model for Alcohol Consumption Apply to Both Male and Female Population?" Paper presented at the 23rd Annual International Institute on the Prevention and Treatment of Alcoholism (Dresden), June 1977.

Smart, R.G. The relationship between birth order and alcoholism among women. *Ontario Psychol Assoc Q*, 16:9-15, 1963.

Smith, A.J. Self-poisoning with drugs: A worsening situation. *Br Med J*, 4(5833):157-159, 1972.

Smith, D.W.; Jones, K.L.; and Hanson, J.W. Perspectives on the cause and frequency of the fetal alcohol syndrome. *Ann NY Acad Sci*, 273:138-139, 1976.

Smith, J.W.; Burt, D.W.; and Chapman, R.F. Intelligence and brain damage in alcoholics: A study in patients of middle and upper social class. *Q J Stud Alcohol*, 34:414-422, 1973.

Smith, J.W., and Layden, T.A. Changes in psychological performance and blood chemistry in alcoholics during and after hospital treatment. *Q J Stud Alcohol*, 33:379-394, 1972.

Smith, W.F.; Ellinwood, E.H., Jr.; and Vaillant, G.E. Narcotic addicts in the mid-1960's. *Public Health Reports*, 81:403-412, 1966.

Smithers Foundation, Inc., ed. *Understanding Alcoholism*. New York: Scribner's, 1968.

Smithurst, B.A., and Armstrong, J.L. Social background of 171 women attending a female venereal disease clinic in Brisbane. *Med J Aust*, 621:339-343, 1975.

Sobell, M.B., and Sobell, L.C. Second year treatment outcome of alcoholics treated by individualized behavior therapy: Results. *Behav Res Ther*, 14:195-215, 1976.

Soszynska, D., and Wierzbicki, T. Alkoholizm wsrod kobiet, na podstawie materialow szpitala 'Kochanowka' w lodzi w latach 1945-1960. (Alcoholism among women—Results from materials in the hospital "Kochanowka" in Lodz 1945-1960.) *Pamietnik 20 Nauk Psychiatrow Pol w Lublinie, Wrzes 1963, 1965*, Pzwl (Warsaw), 1965. pp. 194-196.

Southerby, N., and Southerby, A. Twelve young women. Long Beach, Calif.: Southerby Associates, 1975.

Spain, D.M. Portal cirrhosis of the liver: A review of 250 necropsies with reference to sex differences. *Am J Clin Pathol*, 15:215-218, 1945.

Stafford, R.A., and Petway, J.M. Stigmatization of men and women problem drinkers and their spouses: Differential perception and leveling of sex differences. *J Stud Alcohol*, 38:2109-2121, 1977.

Steffen, J.J.; Steffen, V.B.; and Nathan, P.E. Behavioral approaches to alcohol abuse. In: Estes, N.J., and Heinemann, M.E., eds. *Alcoholism: Development, Consequences, and Intervention.* St. Louis: Mosby, 1977.

Steiner, C.M. *Games Alcoholics Play*. New York: Grove Press, 1971.

Steinglass, P. Family therapy in alcoholism. In: Kissin, B., and Begleiter, H., eds. *The Biology of Alcoholism*, Vol. V. New York: Plenum Press, 1977.

Steinglass, P.; Davis, D.; and Berenson, D. Observations of conjointly hospitalized "alcoholic couples" during sobriety and intoxication: Implications for theory and therapy. *Fam Process*, 16:1-16, 1977.

Steinglass, P.; Weiner, S.; and Mendelson, J.H. A systems approach to alcoholism: A model and its clinical implications. *Arch Gen Psychiat*, 24:401-408, 1971*a*.

Steinglass, P.; Weiner, S.; and Mendelson, J.H. Interactional issues as determinants of alcoholism. *Am J Psychiat*, 128:275-280, 1971*b*.

Sterne, M.W., and Pittman, D.J. *Drinking Patterns in the Ghetto.* Social Science Institute, Washington University, St. Louis, Mo., 1972.

Straus, R., and Bacon, S.D. *Drinking in College.* New Haven, Conn.: Yale University Press, 1953.

Strayer, R. A study of the Negro alcoholic. *Q J Stud Alcohol*, 22:111-123, 1961.

Streissguth, A.P. Maternal alcoholism and the outcome of pregnancy: A review of the fetal alcohol syndrome. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children.* New York: Grune and Stratton, 1976.

Sugerman, A.A.; Sheldon, J.B.; and Roth, C. Defense mechanisms in men and women alcoholics. *J Stud Alcohol*, 36, 1975.

Sullivan, W.C. A note on the influence of maternal inebriety on the offspring. *J Ment Sci*, 45:489-503, 1899.

Sundby, P. *Alcoholism Mortality.* National Institute for Alcohol Research, Publication No. 6. Oslo: Universitetsforlaget, 1967.

Tahka, V. *The Alcoholic Personality: A Clinical Study.* Helsinki: Finnish Foundation for Alcohol Studies, 1966.

Tait, I., and Hutchinson, E.C. An addiction to drug treatment. *Br Med J*, 1:40-42, 1977.

Tamerin, J. "Treatment of Alcoholism in Women." Paper presented at Beth Israel Hospital, New York, Nov. 19, 1977.

Tamerin, J.S.; Neumann, C.P.; and Marshall, M.H. The upper-class alcoholic: A syndrome in itself? *Psychosomatics*, 12:200-204, 1971.

Tamerin, J.S.; Tolor, A.; and Harrington, B. "Sex Differences in Alcoholics: A Comparison of Self- and Spouse Perceptions." Alcohol and Drug Problems Association Conference, 1974.

Tamerin, J.S.; Tolor, A.; and Harrington, B. Sex differences in alcoholics: A comparison of male and female alcoholics' self- and spouse perceptions. *Am J Drug Alcohol Abuse*, 3(3), 1976.

Tamerin, J.S.; Weiner, S.; and Mendelson, J.H. Alcoholics' expectancies and recall of experiences during intoxication. *Am J Psychiatry*, 126:39-46, 1970.

Tarter, R.E. Brain damage associated with chronic alcoholism. *Dis Nerv Sys*, 36:185-187, 1975.

Tarter, R.E.; McBride, H.; Buonaparte, N.; and Schneider, D.V. Differentiation of alcoholics. *Arch Gen Psychiatry*, 34:761-768, 1977.

Task Force on Sex Bias and Sex-Role Stereotyping in Psychotherapeutic Practice. Report of the task force. *Am Psychol*, 30:1169-1175, 1975.

Task Force Report. *Drunkenness: Annotations, Consultants' Papers, and Related Materials.* President's Commission on Law Enforcement and Administration of Justice. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1967.

Teed, R.D. *Effect of Interpersonal Contact with Female Alcoholics on the Attitudes of Counseling Students.* Ann Arbor, Mich.: University Microfilms, 1968.

Tenbrinck, M.S., and Buchin, S.Y. Fetal alcohol syndrome: Report of a case. *JAMA*, 232:1144-1147, 1975.

Theobald, M.A. Addictive problem revisited. *Proc of the 26th Nat Clergy Conf on Alcohol*, 1974.

Thomas, D.A. A study of selective factors of successfully and nonsuccessfully treated women alcoholics. *Diss Abstr*, 32:1862-1863, 1971.

Thorne, F.C., and Pishkin, V. Comparative study of the factorial composition of femininity in alcoholic schizophrenic and normal populations. *J Clin Psychol*, 33(1):18-23, 1977.

Tillgren, J. Om kvinnlig alkolism. (About women's alcoholism.) *Svenska Lakartidn*, 61:2944-2947, 1964.

Tracy, D.A. *Experimental Analysis of the Behavior of Female Alcoholics.* Ann Arbor, Michigan: University Microfilms, 75-24755, 1975.

Tracy, D.A., and Nathan, P.E. Behavioral analysis of chronic alcoholism in four women. *J Consult Clin Psychol*, 44(5), 1976.

Trice, H. Alcoholism group factors in etiology and therapy. *Hum Org*, 15:33-40, 1956.

Tyndel, M. Psychiatric study of 1,000 alcoholic patients. *Can Psychiatr Assoc J*, 19:21-24, 1974.

Tze, W.J., and Lee, M. Adverse effects of maternal alcohol consumption on pregnancy and foetal growth in rats. *Nature*, 275:479, 1975.

Udry, R.J. Marital instability by race, sex, education, and occupation using 1960 census data. *Am J Sociology*, 72:203-209, 1966.

Ulleland, C.N.; Wennberg, R.P.; Igo, R.P.; and Smith, N.J. The offspring of alcoholic mothers. *Pediatr Res*, 4:474, 1970.

Ullman, A.D. Sex differences in the first drinking experience. *Q J Stud Alcohol*, 18:229-239, June 1957.

United States Congress, Senate Committee on Labor and Public Welfare, Subcommittee on Alcoholism and Narcotics, Alcohol abuse among women: Special problems and unmet needs. *Hearings, 94th Congress*. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1976.

Utne, H.E.; Hansen, F.V.; Winkler, K.; and Schulsinger, F. Alcohol elimination rates in adoptees with and without alcoholic parents. *J Stud Alcohol*, 1219-1223, 1977.

Van Amberg, R.J. A study of 50 women patients hospitalized for alcohol addiction. *Dis Nerv Sys*, 3(1):246-251, January 1942.

Van Amberg, R.J. A study of women psychopathic personalities requiring hospitalization. *Psychiatry Q*, 8:61-77, 1944.

Vanderpool, J.A. Alcoholism and the self-concept. *Q J Stud Alcohol*, 30:59-72.

Van Thiel, D.H., and Lester, R. Sex and alcohol: A second peek. *N Engl J Med*, 295(15), 1976.

Vesel, C.; Fridman, V.; and Mijuskovic, N. Suicidalne tendencije kog zena alkoholicara (Suicidal tendencies in women alcoholics). *Alkoholizam* (Belgrade), 13(3-4):79-86, 1973.

Vesell, E.S.; Page, J.C.; and Passanti, G.T. Genetic and environmental factors affecting ethanol metabolism in man. *Clin Pharmacol Ther*, 12:192-201, 1971.

Viel, B.S.; Donoso, D.; Salcedo; and Varela, A. Alcoholic drinking habits and hepatic damage. *J Chron Dis*, 21:157, 1968.

Volpe, J. "Woman in Transition: A Study of the Female Alcoholic in Recovery." Conference of the American Anthropological Association, 1976.

von der Heydt, H. Frauenalkoholismus—eine soziale gefahr? Hinweise auf mogliche grunde. (Alcoholism among women—A social danger? Suggestions as to possible causes.) *Soz Arbeit*, 11(2):68-72, 1962.

von Keyserlingk, H. Uber den alkoholismus bei frauen. (On alcoholism in women.) *Psychiatr Neurol Med Psychol* (Leipzig), 14:268-272, 1962.

Vyare, Kh. Ya. O patogeneticheckikh faktorakh khronicheskogo alkogolizma u muzhchin i zhenshchin (The pathogenetic mechanisms of chronic alcoholism in women and men.) Saarma, Yu., *Voprosy Klinicheskoy Nevrol I Psikh*. Tartu: Tartuskiy Gosudarstvennyy University Essr, 7:80-84, 1968.

Wahl, C.W. Some antecedent factors in the family histories of 109 alcoholics. *Q J Stud Alcohol*, 17:643-654, 1956.

Wall, J.H. A study of alcoholism in women. *Am J Psychiatry*, 93, 1937.

Wallace, W.L. "Women and Alcoholism in Industry." Annual Conference on Women and Alcoholism, Our House, at the YWCA, Detroit, Michigan, June 19, 1974.

Walther, L.; Sears, M.; and Curran, J. Women alcoholics. *Proc 22nd Nat Clergy Conf Alcoholism*, 1970

Waltman, R., and Iniquez, E.S. Placental transfer of ethanol and its elimination at term. *Am J Obstet Gynecol*, 40:180-185, 1972.

Wanberg, K. Prevalence of symptoms found among excessive drinkers. *Int J Addict*, 4:169-185, 1969.

Wangberg, K. and Horn, J.L. Alcoholism symptom patterns of men and women: A comparative study. *Q J Stud Alcohol*, 31, 1970.

Wanberg, K., and Horn, J.L. Alcoholism syndromes related to sociological classification. *Int J Addict*, 8:99-120, 1973.

Wanberg, K., and Knapp, J. Differences in drinking symptoms and behavior of men and women alcoholics. *Br J Addict*, 64, 1970.

Ward, R.F., and Falliace, G.A. The alcoholic and his helpers. *Q J Stud Alcohol*, 31:684-691, 1970.

Warner, R.H., and Rosett, H.L. The effects of drinking on offspring: An historical survey of the American and British literature. *J Stud Alcohol*, 36(11):1395-1420, 1975.

Weathers, B. "Alcoholism and the Lesbian Community." Statement submitted to the Senate Subcommittee on Alcoholism and Narcotics, June 1976.

Wechsler, H., and McFadden, M. Sex differences in adolescent alcohol and drug use: A disappearing phenomenon. *J Stud Alcohol*, 37:1291-1301, 1976.

Wechsler, H.; Demone, H.W., Jr.; and Gottlieb, N. Drinking patterns of Greater Boston adults: Sub-group differences on the QFV indices. *J Stud Alcohol*, in press.

Wechsler, H., and Thum, D. Alcohol and drug use among teenagers: A questionnaire study. In: *Proceedings of the Second Annual Alcoholism Conference of the National Institute on Alcohol Abuse and Alcoholism*. Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1973.

Wechsler, H., and Thum, D. Teenage drinking, drug use, and social correlates. *Q J Stud Alcohol*, 34:1220-1227, 1973.

Weinstein, L. Alcoholism as a political problem in Chile. *Ment Health Soc*, 3:72-76, 1976.

Weinstein, N. Adventures of a woman in science. *Fed Proc*, 35(11): September 1976.

Weiss, A.N.; Montague, J.R.; Manaugh, T.; and English, C.J. Pharmacologic aversive conditioning to alcohol in a private hospital: One-year followup. *J Stud Alcohol*, 37:1320-1324, 1976.

Weiss, G.; Minde, K.; Werry, J.S.; Douglas, V.; and Nemeth, E. Studies on the hyperactive child. VIII: Five-year followup. *Arch Gen Psychiatry*, 24:409-499, 1971.

Weissman, M., and Klerman, G. Sex differences and the epidemiology of depression. *Arch Gen Psychiatry*, 34:98-111, 1977.

Wenger, M.A. Study of autonomic balance in Army/Air Force personnel. *Comparative Psychology Monograph*, 19:101, 1948.

West, P.A.; Hill, S.Y.; and Robins, L.N. The Canter Background Interference Procedure (BIP): Effects of demographic variables on diagnosis. *J Clin Psychol*, 33:765-771, 1977.

Westermeyer, J.; Doheny, S.; and Stone, B. An assessment of hospital care for the alcoholic patient. *Alcoholism: Clin Exper Res*, 2:53-57, 1978.

Wetzel, R.D., and McClure, J.N. Suicide and the menstrual cycle: A review. *Compr Psychiatry*, 13:369-374, 1972.

Whaley, E. "Explanations of Female Alcoholism: Current Trends." Report to NCALI.

Whitehead, P.C. The prevention of alcoholism: Divergences and convergences of two approaches. *Addict Dis*, 1:431-443, 1975.

Whitehead, P.C., and Ferrence, R.G. Women and children last: Implications of trends in consumption for women and young people. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children*. New York: Grune and Stratten, 1976.

Whitehead, P.C., and Ferrence, R.G. Liberated drinking: New hazard for women. *Addictions*, 24(1):36-53, 1977.

Widermannova, L. K Otazce vznidu chronickeho alkoholismu u zen. (On the genesis of chronic alcoholism in women.) *Csl Psychiat*, 53:32-37, 1957.

Widseth, J.C. "Dependent Behavior and Alcohol Use in Delinquent Girls. Paper presented at the meeting of the Eastern Psychological Association, New York, April 1971.

Widseth, J.C., and Mayer, J. Drinking behavior and attitude toward alcohol in delinquent girls. *Int J Addict*, 6:453-461, 1971.

Wiesner, H., and Freund, R. Clinical aspects and treatment of alcohol poisoning in children. *Munch Med Wochenschr*, 115:1761-1764, 1973.

Wilkinson, P.; Kornaczewski, A.; Rankin, J.G.; and Santamaria, N.J. Physical disease in alcoholism: Initial survey of 1,000 patients. *Med J Aust*, 1:1217-1223, 1971.

Wilkinson, P.; Santamaria, J.; Rankin, J.; and Martin, D. Epidemiology of alcoholism: Social data and drinking patterns of a sample of Australian alcoholics. *Med J Aust*, 1(2):1020-1025, May 1969.

Wilkinson, P.; Santamaria, J.; and Rankin, J. Epidemiology of alcoholic cirrhosis. *Aust Annals Med*, 1(2):222-226 (QISA 32:544-545, 1971).

Wilkinson, R. *The Prevention of Drinking Problems.* New York: Oxford University Press, 1970.

Williams, R. *Nutrition and Alcoholism.* Norman, Okla.: University of Oklahoma Press, 1951.

Williams, R. and Brown, R.A. Naming mixed drinks: Alcoholics vs. social drinkers. *Psychol Rep*, 35:33-34, 1974.

Williams, R., and Davis, M. Alcoholic liver diseases—Basic pathology and clinical variants. In: Edwards, G., and Grant, M., eds. *Alcoholism: New Knowledge and New Responses.* Baltimore: University Park Press, 1976. pp. 157-178.

Willis, J.H. Drug dependence: Some demographic and psychiatric aspects in U.K. and U.S. subjects. *Br J Addict*, 64:135-146, 1969.

Wilsnack, R.W., and Wilsnack, S.C. Sex roles and drinking among adolescent girls, Indiana University, 1977. *J Stud Alcohol*, in press.

Wilsnack, S.C. Needs of the female drinker: Dependency, power, or what? *Proc 2nd Ann Alcohol Conf, NIAAA*, 1972.

Wilsnack, S.C. Sex role identity in female alcoholism. *J Abnorm Psychol*, 82(2), 1973.

Wilsnack, S.C. Femininity by the bottle. *Psychol Today* 6, 1973.

Wilsnack, S.C. Effects of social drinking on women's fantasy. *J Pers*, 42(1), 1974.

Wilsnack, S.C. The impact of sex roles on women's alcohol use and abuse. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcoholism Problems in Women and Children.* New York: Grune and Stratton, 1976.

Wilsnack, S.C. "Women in Treatment for Alcoholism." A profile report for NIAAA, 1977.

Wilsnack, S.C. "Women Are Different: Overlooked Differences Among Women Drinkers." Keynote address, Symposium on Women and Alcohol, Institute for the Study of Women in Transition, Portland, Maine, June 1977.

Wilson, G.T., and Lawson, D.M. Effects of alcohol on sexual arousal in women. *J Abnorm Psychol*, 85(5):489-497, 1976.

Winokur, G. Alcoholism in adoptees raised apart for biologic alcoholic parents. In: Greenblatt, M., and Schuckit, M.A., eds. *Alcohol Problems in Women and Children.* New York: Grune and Stratton, 1976.

Winokur, G., and Clayton, P.J. Family history studies: II. Sex differences and alcoholism in primary affective illness. *Br J Psychiatry*, 113:973-979, July 1967.

Winokur, G., and Clayton, P.J. Family history studies: IV. Comparison of male and female alcoholics. *Q J Stud Alcohol*, 29, 1968.

Winokur, G.; Clayton, P.J.; and Reich, T. *Manic Depressive Illness.* St. Louis: Mosby, 1969

Winokur, G., and Pitts, F.N. Affective disorders: VI. A family history study of

prevalences, sex differences, and possible genetic factors. *J Psychiatric Res*, 3:113-123, 1965.

Winokur, G., and Pitts, F.N. Family history studies—A comparison of male and female alcoholics. *Q J Stud Alcohol*, 29:885-891, 1968.

Winokur, G.; Reich, T.; Rimmer, J.; and Pitts, F.N. Alcoholism. III: Diagnosis and familial psychiatric illness in 259 alcoholic probands. *Arch Gen Psychiatry*, 23:104-111, 1970.

Winokur, G.; Rimmer, J.; and Reich, T. Alcoholism: IV. Is there more than one type of alcoholism? *Br J Psychiatry*, 118:525-531, 1971.

Wiseman, J.P. An alternative role for the wife of an alcoholic in Finland. *J Marriage and Family*, 37(1):172-179, 1975.

Wiseman, J.P. "Social Forces and the Politics of Research Approaches: Studying the Wives of Alcoholics." Presented at Women and Their Health: Research Implications of New Era Conference, San Francisco, 1975.

Wiseman, J.P. "Sex Roles, Power Differentials, and Coping Patterns of Spouses of Alcoholics." Presented at the National Conference on Family Relations Annual Meeting, New York, 1976.

Wiseman, J.P. Sober time: The neglected variable in the recidivism of alcoholic persons. *Proc Sec Ann Alcoholism Conf, NIAAA, 1972.*

Wolin, S.J.; Bennett, L.A.; and Noonan, D. "Ritual and Myth: Their Role in the Intergenerational Continuity of Family Identity." Paper presented at 1976 Theory Construction Workshop, National Council on Family Relations, New York City, Oct. 19, 1976.

Wolin, S.J.; Bennett, L.A.; and Noonan, D. "Environmental Family Factors Related to Alcoholism Recurrence." Presented at National Council of Alcoholism Annual Meeting, St. Louis, Mo., May 1978.

Wood, H.P., and Duffy, E.L. Psychological factors in alcoholic women. *Am J Psychiatry*, 123:341-345, 1966.

Woodruff, R.A.; Goodwin, D.W.; and Guze, S.B. *Psychiatric Diagnosis*. New York: Oxford University Press, 1974.

Woodruff, R.A.; Guze, S.B.; Clayton, P.J.; and Carr, D. Alcoholism and depression. *Arch Gen Psychiatry*, 28:97-100, 1973.

Woodside, M. Women drinkers admitted to Holloway Prison during February, 1960. A pilot survey. *Br J Criminol*, 1:221-225, 1961.

World Health Organization. *WHO Tech Rep, Ser No. 42*, Geneva, Switzerland, September 1951. p. 4.

World Health Organization Expert Committee on Mental Health: Alcoholism Subcommittee, Second Report. *WHO Tech Rep*, Series No. 48. Geneva, 1952.

Wright, B., and Taska, S. The nature and origin of feeling feminine. *Br J Soc Clin Psychol*, 5:140-149, 1966.

Yazigi, J.; Bernardita, R.; and Bernardita. L. Pancreatic damage in alcoholism.

In: Popham, R., ed. *Alcohol and Alcoholism*. Toronto: University of Toronto Press, 1970.

Youcha, G. *A Dangerous Pleasure: Women's Use and Misuse of Alcohol*. New York: Hawthorn Press, forthcoming.

Young, L.D., and Keeler, M.H. Sobering data on lithium in alcoholics. *Lancet*, Jan. 15, 1977, p. 144.

Yules, R.B.; Freedman, D.X.; and Chandler, K.A. The effect of ethyl alcohol on man's electroencephalographic sleep cycle. *Electroencephalogr Clin Neurophysiol*, 20:109-111, 1966.

Zador, P. Statistical evaluation of the effectiveness of alcohol safety action projects. *Accident Anal Prev*, 8:51-66, 1976.

Zax, M.; Gardner, E.A.; and Hart, W.T. Public intoxication in Rochester: A survey of individuals charged during 1961. *Q J Stud Alcohol*, 25:669-678, 1964.

Zax, M.; Gardner, E.A.; and Hart, W.T. A survey of the prevalence of alcoholism in Monroe County, New York, 1961. *Q J Stud Alcohol*, 28:316-327, 1967.

Zax, M.; Gardner, E.A.; and Hart, W.T. Alcoholism prevalence in Monroe County. *Q J Stud Alcohol*, 28(2):316-327, 1967.

Zelen, S.I.; Fox, J.; Gould, E.; and Olson, E.W. Sex-contingent differences between male and female alcoholics. *J Clin Psychol*, 22:160-165, 1966.

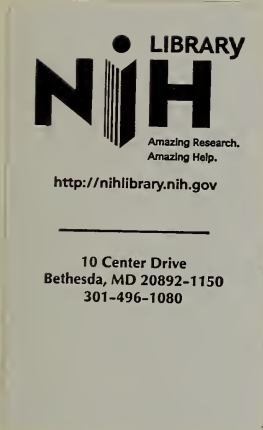
Zetterman, B. Vardproblem i fraga om kvinnliga alkoholmissbrukare. (Problems in an institution for female alcoholics.) *Soc Med Tidskr*, 43:326-328, 1966.

Zubin, J., and Spring, B. Vulnerability: A new view of schizophrenia. *J Abnorm Psychol*, 86:103-126, 1977.

Zucker, R.A., "Implications of Recent Adolescent Drinking Research for Programs of Primary Prevention and Education." Paper presented at the North American Congress on Alcohol and Drug Problems, Prevention Section. San Francisco, December 1974.

Zung, B.J., and Charalampous, K.D. Item analysis of the Michigan Alcoholism Screening Test. *J Stud Alcohol*, 36:127-132, 1975.

U.S. GOVERNMENT PRINTING OFFICE : 1980 O - 316-863



DHEW Publication No. (ADM) 80-835
Printed 1980